1974

1974

Report of the National Marine Fisheries Service for the Calendar Year 1974

SEP 2 4 1975
FISH & WILDLIFE SERVICE

July 1975

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

July 3, 1975

President of the Senate
Speaker of the House of Representatives

Sirs:

I have the honor to transmit herewith the National Marine Fisheries Service Report for Calendar Year 1974.

The report describes the structure of the organization, documents the organization's progress toward achieving its goals of fisheries research, utilization and management in the national interest, and lists the publications of its staff during 1974.

Sincerely,

Rogers Morton

Secretary of Commerce

Enclosure

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

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INTRODUCTION

This report, required by Section 9(a) of the Fish and Wildlife Act of 1956, as amended 16 U.S.C. 742h(a), covers calendar year 1974.

It describes (1) the state of the U.S. fisheries in calendar year 1974, (2) the present organization of the National Marine Fisheries Service (NMFS), and (3) significant developments. It also lists the publications pertinent to its goals and activities during that year.

STATE OF THE FISHERIES

In 1974, the U.S. commercial harvest of fish, shellfish, and other aquatic life was 4.9 billion pounds worth $898 million to the vessel owners and fishermen. Compared with 1973, landings increased by 4 percent but the value decreased 1 percent principally because of lower ex-vessel prices. The slight gain in landings was attributed to larger catches of menhaden, tuna, and crabs. Some of the gain, however, was offset by a drop in the landings of salmon, flounders, shrimp, and oysters.

Commercial fish landings fall far short of depicting the true annual ocean harvest of the United States. Recreational fishermen catch a large amount of marine food fish. Mr. Robert W. Schoning, Director of NMFS, has estimated the sport catch of edible saltwater fish at "close to two-thirds of the commercial catch" (Marine Fisheries Review 36(10):36). This estimate, which does not include the recreational catch of shellfish, is why obtaining better recreational fish catch statistics has become a major objective of NMFS. The most recent nationwide figures appear in the 1970 Salt-Water Angling Survey, published by NMFS in April 1973 (as Current Fisheries Statistics No. 6200). It showed that 9,392,000 U.S. anglers fished in marine waters, an increase of 1,156,000 from 1965. They caught 817 million finfish, 11 percent more than the 737 million fish in 1965. The estimated weight of the catch rose from 1.47 billion pounds in 1965 to 1.58 billion pounds in 1970, a 7-percent increase. The Salt-Water Angling Survey is made every 5 years with 1975 the next survey year.

Shrimp was the most valuable commercial fisheries in the country in 1974. Landings of 369.6 million pounds worth $177.9 million to the vessel owners and fishermen declined 1 percent in volume and 19 percent in value compared with 1973. Still, shrimp accounted for 21 percent of the total ex-vessel value of U.S. commercial fishery landings.

Tuna landings of 386.2 million pounds at U.S. ports were 13 percent more than in 1973. U.S. fishing craft landed in Puerto Rico an additional 165 million pounds of tuna.

In 1974, as in the two previous years, landings for human food (2.4 billion pounds) were slightly less than the landings for industrial products.

The value of fishery products processed in the United States from both domestic and imported raw materials in 1974 was $2.8 billion--2 percent more than in 1973, the former record year. Packaged fresh and frozen products made up 44 percent of the total value; canned, 46 percent; industrial, 7 percent; and cured, 3 percent.

Processors of fishery products found market conditions depressed in 1974. Compared with 1973, production declined for fresh and frozen packaged fish fillets and steaks (126.7 million pounds) by 5 percent; fish sticks and portions (377.6 million pounds) by 11 percent; and breaded shrimp (89.1 million pounds) by 20 percent. The pack of canned fishery products was 1.5 billion pounds worth a record $1.3 billion--a decline of 7 percent in volume and an increase of 10 percent in value compared with 1973. There were a record canned pack of tuna and increases in salmon and sardine packs, but decreases in other products offset these increases and brought about the general overall decline. Industrial fishery products (exclusive of sealskins, and other items further processed from imports) were valued at $198 million--2 percent less than in 1973. A drop in prices of fish meal accounted largely for the drop. Cold-storage holdings of frozen fishery products reached an alltime high of 459.4 million pounds on December 31, 1973. In 1974, holdings did not decline as much as expected and were consistently higher than in the two previous years until November when they returned to more manageable levels. December 31, 1974, holdings were 432.2 million pounds, a 6-percent decrease compared with the same date in 1973.

Imports of fishery products were worth a record $1.7 billion in 1974--11 percent more than in 1973, the former record year. Imports of edible fishery products were 2.1 billion pounds worth $1.5 billion--about the same as 1973 in quantity, but 7 percent more in value. The value of 1974 imports of nonedible fishery products ($215.5 million) was 17 percent more than in 1973.

Exports of domestic fishery products in 1974 were valued at $262.1 million, a loss of 12 percent from 1973.

Civilian per capita consumption of fishery products decreased from 12.7 pounds (edible weight) in 1973 to 12 pounds in 1974.

ADMINISTRATION

MISSION AND ORGANIZATION

The National Marine Fisheries Service (NMFS) has an integrated program of research and services related to the protection and rational use of living marine resources for their aesthetic, economic, and recreational value. NMFS administers programs to determine how the naturally varying environment and man's activities affect the living marine resources; to provide knowledge and services to foster their efficient and judicious use; and to achieve domestic and international management, use, and protection of living marine resources. The Service is organized as follows:

The Director formulates and executes basic policies and manages NMFS. He is assisted by a Deputy Director.

The primary program functions of NMFS have been assigned among four areas: Resource Research, Resource Utilization, Resource Management (each headed by an Associate Director), and International Fisheries (headed by an Assistant Director). (Figure 1 shows the NMFS organization and Figure 2 the principal facilities.)

The Office of Resource Research also has reporting directly to it seven major field fisheries research centers concerned primarily with research carried out as part of a nationwide program designed to solve problems of a national or international nature. These Centers are: the Northwest Fisheries Center, Seattle, Washington; the Southwest Fisheries Center, La Jolla, California; the Gulf Coast Fisheries Center, Galveston, Texas; the Southeast Fisheries Center, Miami, Florida; the Atlantic Estuarine Fisheries Center, Beaufort, North Carolina; the Middle Atlantic Coastal Fisheries Center, Highlands, New Jersey; the Northeast Fisheries Center, Woods Hole, Massachusetts. These fisheries centers coordinate and oversee research at 17 major laboratories and numerous smaller field stations. In addition, three field facilities also report to the Washington Office.

Within the Office of Resource Utilization, there are three major fisheries utilization research centers conducting microbiological, chemical, and technological research to improve the quality and utilization of fishery resources. These centers, which report directly to Washington, are the Northeast Utilization Research Center, Gloucester, Massachusetts; Pacific Utilization Research Center, Seattle, Washington; Southeast Utilization Research Center, College Park, Maryland.

The field structure, in addition to the centers mentioned above, consists of five Regional Offices each headed by a Regional Director. (See figure 3.) Regional Directors act as representatives of the Director in their geographical area of responsibility with State conservation agencies, recreational interests, the fishing industry, universities, and the general public. Regional Offices also plan, organize, and manage regionalized fishery resource research, conservation, management, and utilization programs within their areas.

BUDGET

Total direct appropriations of $56,384,000 and S-K funds of $8,944,000 or a total of $65,328,000 were available for fisheries activities in FY 1975 (see table 1).

Congress provided an increase of $480,000 for reactivation of the vessel Townsend Cromwell and $1,800,000 for use as follows: $500,000 for the Atlantic, Gulf, and Pacific States' Fisheries Commissions for data gathering leading to the development of a national fisheries policy; and $1,300,000 for construction, maintenance, and operation of four salmon and steelhead rearing ponds in the Columbia River hatchery system. An additional $375,000 was made available from Saltonstall-Kennedy (S-K) reserve funds to support Pacific fisheries development. Late in the calendar year, another $1 million in "Saltonstall-Kennedy" funds was released to implement a program to alleviate the problem of excess fish supplies over a two-year period.

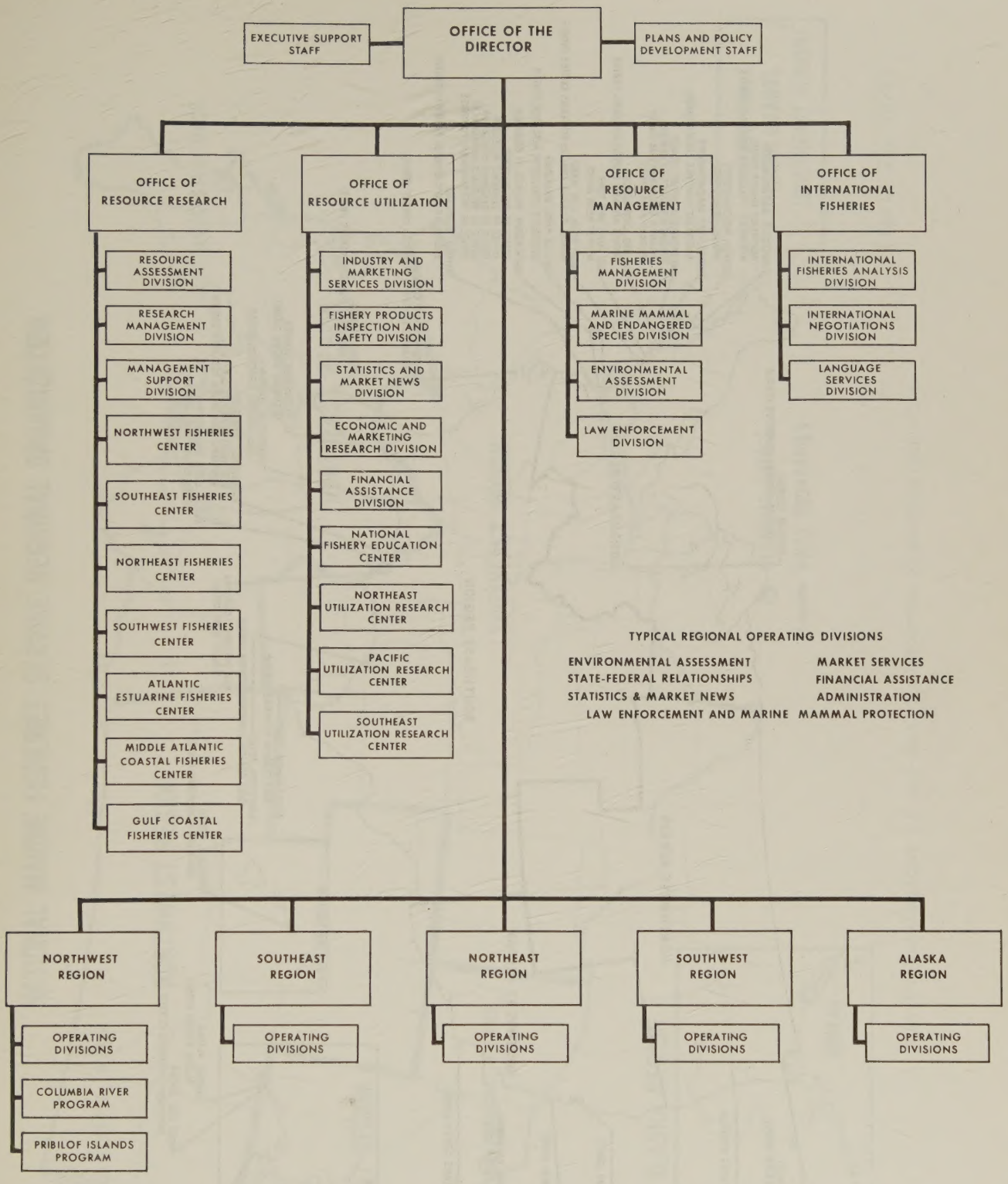

Figure 1.--Organizational structure of NMFS.

(FEBRUARY 1975)

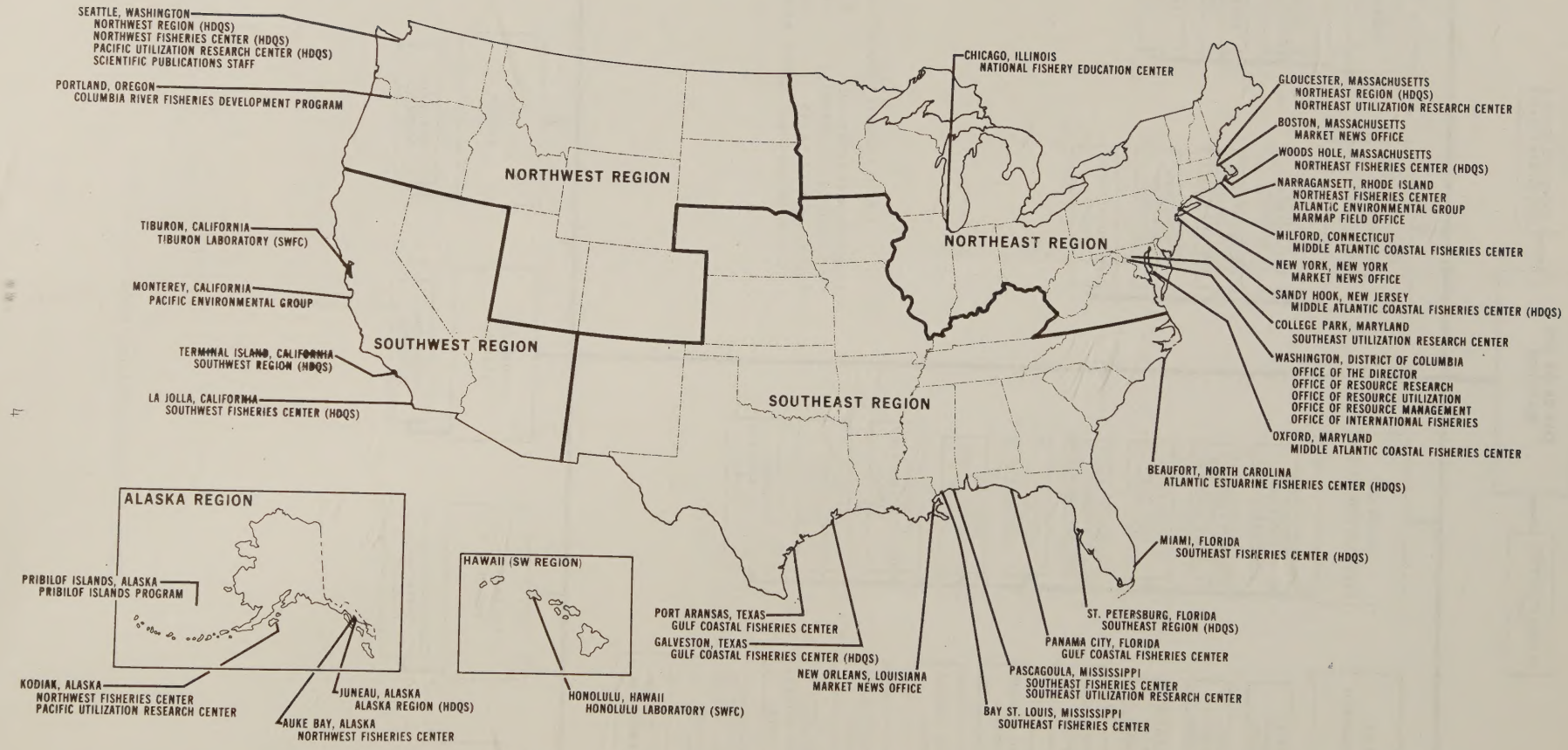

Figure 2.--Principal facilities of NMFS.

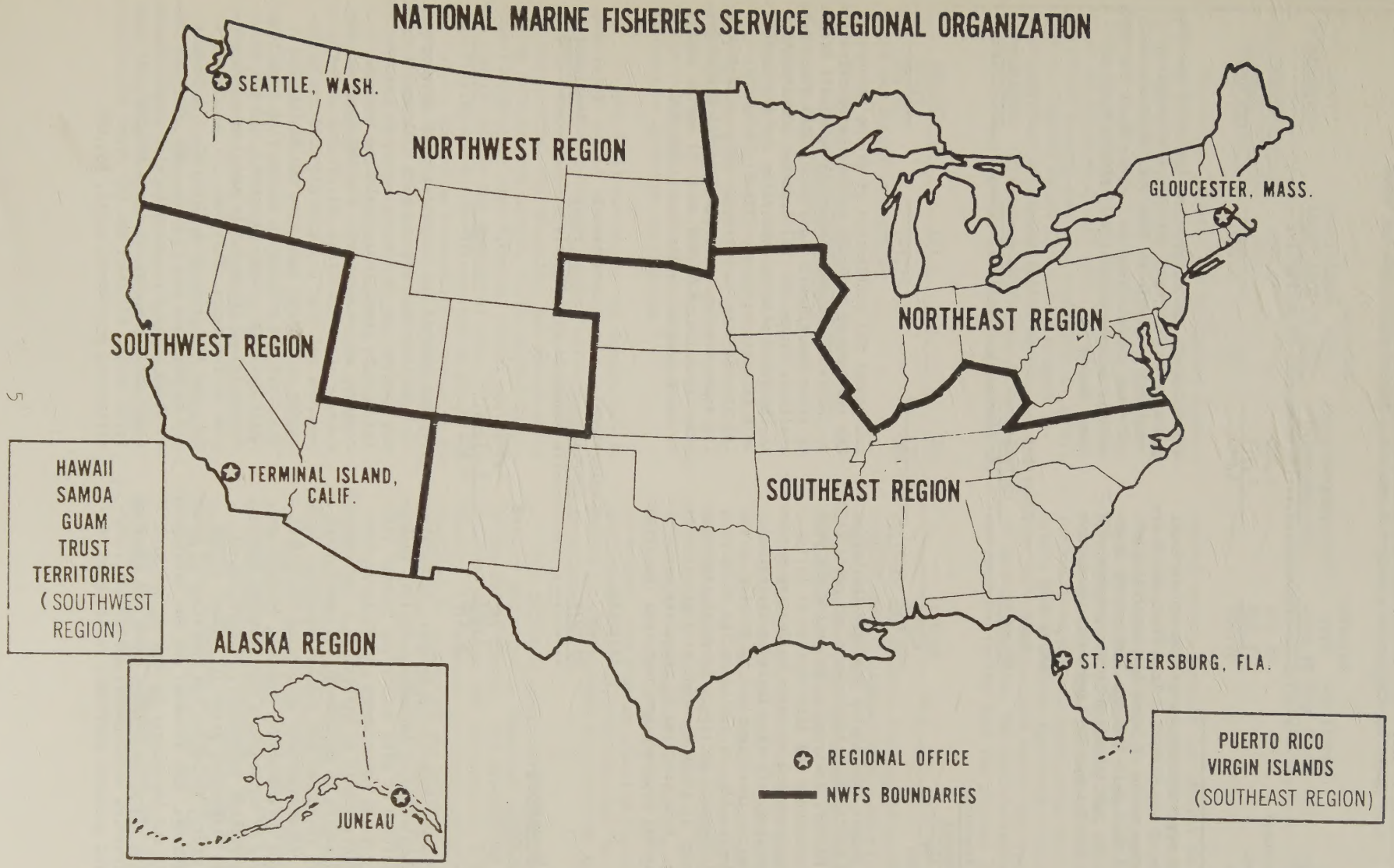

Figure 3.--Regions of the National Marine Fisheries Service.

Table 1.--Comparative budget summary for fiscal years 1974 and 1975

TOTALS	Adjusted base FY 1974	Congressional increases	Additional NOAA funds	Total available
	(In thousands of dollars)			
Appropriated*	52,399	2,280	1,705	56,384
S-K Funds	7,569	1,375	---	8,944
TOTAL	59,968	3,655	1,705	65,328

*These appropriated amounts do not include: (1) assets of the Fisheries Loan Fund, which are based on repayments of loans and interest payments; (2) fees paid into the Fishermen's Guaranty Fund for participation in the program; (3) funds for the October 1974 pay raise, executive direction and administration, and other services provided by NOAA; and (4) indirect budgetary resources available to NMFS from reimbursements and trust funds. They do include funds for NMFS vessels managed centrally by NOAA's National Ocean Survey.

Activity	Adjusted base FY 1974	Congressional increases	Additional NOAA funds	Total available
	(In thousands of dollars)			
Resource Research & Assessment				
Direct Approp.	22,853	480	1,131	24,464
S-K Funds	4,042	---	---	4,042
TOTAL	26,895	480	1,131	28,506

This budget subactivity includes the marine resources monitoring, assessment, and prediction program (MARMAP) designed to determine and predict the abundance and distribution of living marine resources and research to develop necessary technology. It also includes biological and ecological investigations to develop an in-depth understanding of living marine resources, their environment, and their interrelationships. Ship support is included under biological investigations. Data produced by resources research and assessment programs are necessary for proper management and utilization of marine resources. The increase of $480,000 is for the reactivation of the vessel Townsend Cromwell by NOAA's Office of Fleet Operations. Additional NOAA funds made available financed: (1) expanded commitments to the International Commission for the Northwest Atlantic Fisheries (ICNAF), $400,000; (2) bluefin tuna conservation program, $350,000; (3) endangered species, $30,000; (4) MARMAP program expansion, $260,000; and (5) marine mammal research program requirements, $91,000.

Activity	Adjusted base FY 1974	Congressional increases	Additional NOAA funds	Total available
	(In thousands of dollars)			
Resource Management & Development				
Direct Approp.	28,651	1,800	574	31,025
S-K Funds	3,527	1,375	---	4,902
TOTAL	32,178	3,175	574	35,927

This budget subactivity covers: formulation and implementation of management policy, including acquisition of data concerning foreign fishing, and related enforcement surveillance functions; grants-in-aid to States, on a cost-sharing basis, to assist in management and development of fishery resources and related research; analyses and recommendations concerning the effect of proposed environmental changes; research on feasibility of aquaculture for selected species, including related technology; restoration of anadromous fisheries, primarily salmon in the Columbia River, including the operation of hatcheries, fishways, and screens, and the development of methods and technology to improve survival of fish during migration between ocean and spawning areas; fisheries development; statistical, marketing, and economic services; research on harvesting methods and technology; the development of technology and methods that will permit safer and greater use of fishery resources; and Pribilof Islands operations, including fur seal research and management. The OMB approved the release of an additional $1,375,000 in S-K reserves and this provided $375,000 for development of Pacific fisheries and $1,000,000 to alleviate the problem of excess fish supplies. Additional NOAA funds financed: (1) the St. George Island (Pribilof Islands) research program on fur seals, $161,000; (2) developing a National Fisheries Plan, $137,000; (3) disaster aid to Maryland and Virginia, $86,900; (4) termination costs in connection with comprehensive river basin planning studies, $60,000; (5) contract costs, $75,000; and (6) other miscellaneous unfinanced programmed costs, $53,200.

Table 1.--Comparative budget summary for fiscal years 1974 and 1975 (cont.)

Activity	Adjusted base FY 1974	Congressional increases	Additional NOAA funds	Total available
	(In thousands of dollars)			
Fisheries Financial Support Services				
Direct Approp.	895	---	---	895

These funds provide for management support for the Fishing Vessel Obligation Guarantee Program (Mortgage Insurance Program) authorized by Title XI of the Merchant Marine Act, 1936, as amended by the Federal Ship Financing Act of 1972; the Fisheries Loan Fund authorized by the Fish and Wildlife Act of 1956, the Vessel Construction Subsidy Program (terminated in 1969), and the Capital Construction Fund Program authorized under section 21 of the Merchant Marine Act of 1970. Appropriations for the Fishermen's Guaranty Fund, together with fees collected from vessel owners, provide for payment to vessel owners and crews to compensate for certain financial losses resulting from the seizure of U.S. fishing vessels by foreign governments. The Offshore Shrimp Fund created by the Offshore Shrimp Fisheries Act of 1973 (PL 93-242, January 2, 1974) authorizes the annual payment to Brazil for enforcement expenses in connection with the U.S.-Brazil Shrimp Fishing Agreement. Collections from participating boat owners are split into miscellaneous receipts, for administrative expenses, and deposits to the fund for payment to Brazil.

PLANS AND POLICY DEVELOPMENT

The Plans and Policy Development Staff advises the Director on NMFS activities that involve planning, program, and legislation policy coordination, and needs of the future in developing missions, goals, objectives, and policies. In so doing, the Staff provides coordination within NOAA, other agencies of the Federal Government, and other public and private organizations. Also, it makes and/or coordinates special analytical studies to develop and evaluate alternative solutions to problems.

The Staff (1) advises on the design, development, and use of management and data information systems and the evaluation of the effectiveness of NMFS programs and activities; (2) coordinates the formulation, justification, and presentation of the NMFS program budget, including the development of program papers, annual budget estimates, and justifications for appropriations; (3) provides assistance to the Directorate in executing the budget, including preparation of requests for supplemental appropriations, cost operating plans, and reprograming actions; (4) performs analyses on the rate of progress in carrying out authorized programs and recommends changes, as necessary, to achieve the best use of funds and manpower.

Established in 1971, the interdisciplinary Staff includes program analysts for the several activity areas and disciplines of NMFS, as well as financial analysts and secretarial support.

The National Advisory Committee on Oceans and Atmosphere (NACOA), in its 1972 and 1973 annual reports to the President and Congress, urged that NOAA develop a National Plan to rehabilitate the domestic fishing industry. NMFS adopted NACOA's suggestion and established a small planning unit to develop a National Fisheries Plan that will recommend actions needed during the next 10 years.

Meetings were held with officials from NMFS, the Department of Interior's Fish and Wildlife Service and Bureau of Outdoor Recreation, and NOAA's Office of Sea Grant and Office of Coastal Zone Management to assist in formulating goals for the plan. It was decided that in accordance with NACOA's recommendation, the plan should be national, not just a NMFS plan. All levels of government, the fishing industry (recreational and commercial), universities, and the general public have been asked to contribute to its development.

The following goals were established: (1) Restore and maintain fisheries stocks of interest to the United States. (2) Develop and maintain a healthy commercial and recreational fishing industry. (3) Improve the contribution of marine resources to recreation and other social benefits. (4) Increase the supply of wholesome, competitively priced fishery products to the consumers.

The NMFS Regional Offices and Centers reviewed the status of domestic fisheries and the problems facing them. Based upon the review, a Draft Outline of the National Plan was prepared. The Draft Outline discussed the general problems of fisheries and identified 23 issues that should be considered in formulating the national plan. A series of options for addressing each issue was proposed. A summary of the status and potential of major U.S. fisheries was also included.

The Draft Outline was used as a basis for discussion and for soliciting the advice of a

wide range of people concerned with U.S. fisheries. This was done through a series of "town hall" meetings and "workshops" organized through contracts with the Interstate Marine Fisheries Commissions and assistance from NOAA's Marine Advisory Service, State agencies, and NMFS staff.

As an additional input to the plan, consultants prepared an economic forecast of the fishing industry and an estimate of the benefits that it provides the Nation.

The National Plan staff in Washington, D.C., has begun to assemble and summarize comments on the Draft Outline. Issues and options will be refined, and a final draft will be completed in July 1975.

CONGRESSIONAL AND LEGISLATIVE AFFAIRS

That portion of the Office of Congressional and Legislative Affairs (NOAA) detached for service with NMFS formulates and conducts work on the legislative program of NMFS and its relationships with Members of Congress. Because the legislative program is complex and diversified, NMFS must deal with numerous legislative proposals and programs relating to or affecting the U.S. commercial fishing industry, the sportsmen interested in the marine recreational fishery, and the living natural resources used by or affecting both.

This staff prepares, coordinates, and implements the NMFS legislative program, and maintains liaison with the Office of Congressional and Legislative Affairs (NOAA) and the Assistant General Counsel for Legislation (Department of Commerce). Its purpose is to review and coordinate reports on specific legislative proposals, and to respond to Congressional requests for information and assistance. Additional functions are: (1) prepare testimony for and attend hearings; (2) review and correct transcripts of hearings as necessary; (3) analyze Federal statutes bearing on NMFS programs, indicating the extent of impact on NMFS functions and general procedures; and (4) provide general consultative and advisory services on legislative and related matters.

During the 2d Session of the 93d Congress (1974), 12 new Federal laws pertaining to marine fisheries and the commercial fishing industry were enacted. These were:

(1) S.Res. 222 (National Ocean Policy Study-Feburary 19, 1974).--Authorizes the Senate Commerce Committee to undertake an investigation and study of national ocean policy. This will be a comprehensive program in cooperation with other Congressional Committees and concerned Federal agencies. The study will culminate in a report to the Senate, together with recommendations for legislation. The study is now under way.

(2) Public Law 93-326 (National School Lunch Act Amendments - June 30, 1974) (H.R. 14354).--Among other things, adds a new subsection (E) to section 6 of the National School Lunch Act, which provides that in donating commodities, the Secretary of Agriculture shall give special emphasis to "high protein foods, and meat and meat alternates." High-protein foods include cheese, milk, and fish.

(3) Public Law 93-339 (Northwest Atlantic Fisheries Act Amendment - July 10, 1974) (H.R. 14291).--Extends the scheme of international enforcement for the conservation regulations of the International Commission for the Northwest Atlantic Fisheries (ICNAF) to the region off the Mid-Atlantic coast of the United States from Long Island to Cape Hatteras. In addition, the Act requires payment for travel expenses and per diem incident to attendance at ICNAF meetings for not more than five members of the advisory committee.

(4) Public Law 93-347 (Domestic Food Assistance Programs - July 12, 1974) (S. 3458).--Public Law 93-86, the Agriculture and Consumer Protection Act of 1973, provided the Secretary of Agriculture with the authority to use funds available under the provisions of Section 32 of Public Law 320, 74th Congress (7 U.S.C. 612c), if not expended or needed to carry out such provisions, to purchase nonsurplus agricultural commodities and their products, to maintain the level of assistance required by domestic food assistance programs. The Act, as recently amended, extends this authority until July 1, 1975, and adds "seafood and their products" to the nonsurplus agricultural commodities which the Secretary of Agriculture is authorized to purchase with Section 32 funds.

(5) Public Law 93-351 (Older Americans Act Amendments - July 12, 1974) (H.R. 11105).--Adds a new subsection (d) to Section 707 of the Older Americans Act of 1965 which provides that in donating commodities, the Secretary of Agriculture shall give special emphasis to high-protein foods, meat and meat alternates. High-protein foods include cheese, milk, and fish.

(6) Public Law 93-362 (Anadromous Fish Conservation Act - July 30, 1974) (H.R. 11295).--Extends the authority for the existing program. However, the Federal share for multistate projects was increased to 66-2/3 percent and the funding authorization for the Act was increased to $20 million.

(7) Public Law 93-380 (Elementary & Secondary Education Act Amendments - August 21, 1974) (H.R. 69).--Among other things, provides that a State educational agency can apply either directly or through local educational agencies for a grant for programs and projects (including the acquisition of equipment and where necessary the

construction of school facilities) that are designed to meet the special educational needs of children of migratory agricultural workers or of migratory fishermen.

(8) Public Law 93-386 (Small Business Amendments of 1974 - August 23, 1974) (S. 3331). --Among other things, provides that if loan applications are being refused or loans denied by other departments or agencies responsible for such work or activity by reason of an administratively declared moratorium, then no duplication of Federal financial assistance programs shall be deemed to have occurred. Therefore, fishermen would be covered by the financial assistance provisions of the Small Business Act while the Fisheries Loan Fund moratorium exists. In addition, the Act provides for assistance to any small business concern seriously and adversely affected by a shortage of fuel, electrical energy, or energy-producing resources, or by a shortage of raw or processed materials resulting from such shortages if the Administration determines that such a concern has suffered or is likely to suffer substantantial economic injury without such relief.

(9) H.Res. 988 (House Committee Reform Amendment of 1974 - October 8, 1974).--Changes various committee jurisdictions for the 94th Congress. The House Merchant Marine & Fisheries Committee retained all areas under its present jurisdiction; however, it gained international fishing agreements that previously had been under the purview of the Foreign Affairs Committee. In addition, several procedural and administrative changes were incorporated in H.Res. 988. Of interest is the new bill referral procedure whereby the Speaker is entitled to use joint, split, or sequential referral as alternatives to the existing single committee referral procedure. Bills can also be referred to ad hoc committees with the approval of the House.

(10) Public Law 93-479 (Foreign Investment Study Act of 1974 - October 26, 1974) (S. 2840). --Requires the Secretaries of Commerce and Treasury to make an interim report to Congress at the end of 1 year and a final report 6 months later. Furthermore, provides the Secretaries with specific authority to collect information needed to make a comprehensive overall study of foreign direct and portfolio investments in the United States. However, notice will be given to customers of banks, brokerage houses, real estate companies, and other institutions that this information will be furnished to the Government. In addition, the law provides enforcement powers to be used against those who refuse to supply the required information.

(11) Public Law 93-618 (Trade Reform Act of 1974 - January 3, 1975) (H.R. 10710).--Among other things, gives the President the power to lower or even eliminate tariffs on imports in return for trade concessions from other nations. Also provides relief for industries and workers harmed by an increase in imports and gives the President the right to retaliate against countries that raise trade barriers against the United States. In addition, the Act has a section that involves fair trade guarantees dealing particularly with countervailing duties and antidumping provisions.

(12) Public Law 93-627 (Deepwater Port Act of 1974 - January 3, 1975) (H.R. 10701).--Authorizes, among other things, a Federal licensing and regulatory program for construction and operation of deepwater ports beyond the three-mile limit of U.S. territorial waters with specific provision being made for protecting the marine and coastal environment to prevent or minimize adverse impacts from such ports. The Secretary of Transportation, in consultation with NOAA and other Federal agencies (under certain provisions), will administer the Act.

GENERAL COUNSEL

The Associate General Counsel for Living Marine Resources provides comprehensive legal counsel for the NMFS. He closely follows litigation involving or affecting NMFS.

The following cases in which NMFS was involved were filed in 1974 or filed prior to that year but carried over into 1974.

Bjorn Jensen v. National Marine Fisheries Service, Philip Roedel - #778-72C2 (USDC, WD Washington) - Suit by Troller's Association (by Jensen) against Philip Roedel (NMFS) to prevent enforcement of International Pacific Halibut Commission regulations. Suit claims that regulations that prohibit retention of all net-caught halibut discriminate in favor of troll fishermen without factual or legal basis. Government's motion to dismiss was granted by District Court September 1973, on grounds that Court lacked jurisdiction because regulation promulgated by international body. The 9th Circuit Court affirmed the dismissal on jurisdictional grounds.

Friends of Animals, Inc. et al. v. Joseph Blum, et al. - #74-59Z D. D.C. - Suit protesting waiver of moratorium on importation of South African fur skins into this country. Court issued order dismissing case September 30, 1974.

United States v. Florida and Texas - #54 (U.S. Supreme Court) - Suit concerns these two States' rights to control and have jurisdiction over fishing by foreign vessels or their crews in the sea more than 3 geographical miles from the coastline of the United States. Three sets of interrogatories and answers have been filed. A request for production data from Texas was filed October 15, 1974.

Save the Dolphins v. U.S. Department of Commerce - #C-74-0026 (USDC ND Cal) - Suit concerns status of research film on effects of killer whale sounds on the mortality of porpoises; trial pending in San Francisco, was scheduled for January 6, 1975. Responses to interrogatories and memorandum of law on the "(b)(4)" exemption to the Freedom of Information Act submitted to Justice Department. Motion for summary judgment filed November 20, 1974, and heard on December 31. Settlement negotiations are under way.

American Tunaboat Association, et al. v. Dent - #73-2990GT (USDC SD Cal) - Suit alleges improprieties by NMFS in implementation of tuna regulations; and seeks (1) injunction against enforcement of tuna regulation applicable to U.S. fishermen until other parties to IATTC implement similar restrictions and (2) an order requiring United States to embargo tuna from countries fishing in violation of IATTC conservation program. Plaintiffs now conducting discovery and have agreed to continuation to February 10, 1975.

U.S. v. Approximately 633.79 Tons of Yellowfin Tuna (QUO VADIS) - Civil Suit #74-154GT (USDC SD Cal) - Tuna forfeiture case, filed March 28, 1974, arising out of violation of Tuna Conventions Act of 1950 and forfeiture of yellowfin tuna valued at $300,000 for failure to report transshipment of catch and for exceeding 15-percent closed season incidental catch rate. Defendant's motion for summary judgment, on grounds statute was unconstitutional delegation of legislative powers to the executive branch and void for uncertainty, was denied on September 16. Trial scheduled for March 1975. Settlement negotiations under way.

Committee for Humane Legislation, Inc. v. Frederick B. Dent, et al. - Civil #74-1465 (USDC D.C.) - Suit filed October 4, 1974, for preliminary and permanent injunction forbidding the issuance of permits that will allow commercial fishermen to take marine mammals. The Court found after a hearing that the Environmental Defense Fund and the Committee for Humane Legislation have standing but the scope of the trial has not been determined.

U.S. v. Approximately 55.71 Tons of Yellowfin Tuna (M/V CAPE SAN VINCENT) - Civil #84-473-T (USDC SD Cal) - Complaint for forfeiture filed October 10, 1974. The case involves a violation of the Tuna Conventions Act by fishing inside regulatory area August 12 and 17 while reporting position as outside. Settlement negotiations under way.

Arrest of Jerry Mitchell (Violation of Marine Mammal Protection Act) - Mitchell was arrested on November 9, 1974, in California for capturing porpoises in Bahamian waters for shipment and sale to public display facilities in other countries, without a permit under the Marine Mammal Protection Act of 1972. Asst. U.S. Attorney in Miami requested NOAA to help research the question of venue - i.e., whether the case may be brought in the Southern District of Florida, rather than California. U.S. District Court, Southern District of California, ruled question of venue properly raised and venue existed only in California.

U.S. v. State of Alaska Cook Inlet - #A-45-67 (USDC Anchorage, Alaska) - Dispute between the Federal Government and State of Alaska over the location of its territorial sea at numerous locations. Concerns question of historic bays and matter of straight base lines. In December 1972, U.S. District Court in Anchorage rendered a decision giving jurisdiction in lower Cook Inlet to State of Alaska. That decision created considerable confusion regarding State and/or Federal enforcement against foreign fishing.

U.S. et al. v. Washington - Civil #9213 (USDC WD Wash) - Suit by U.S. and 14 Indian tribes filed September 1970, to enjoin State of Washington from enforcing State fishing regulations against the Indians. Plaintiffs prevailed in District Court (decision of February 12, 1974), and the case is on appeal to 9th Circuit and oral argument has been heard. However, trial judge retained jurisdiction over numerous matters.

In addition, there were several (about seven) cases against individual vessels involving mortgage foreclosure, attaching right of claims, interlocutory sale, and collection of deficiency judgment.

PUBLIC AFFAIRS

The Public Affairs activities of NMFS are a function of the Public Affairs Officer and his staff, who are detailed to NMFS and supervised by the NOAA Director of Public Affairs.

The NMFS Public Affairs Office is responsible for liaison between NMFS and NOAA in all public affairs activities. The Office functions as a part of the staff of the NMFS Director and has close contact with the Associate Directors as well as the NMFS Regional and Center Directors.

It (1) produces national news releases and feature items that reach as many as 1,500 news outlets across the Nation; (2) maintains a special mailing list of about 700 outdoor writers who are sent selected news releases; (3) prepares articles for each issue of the quarterly periodical NOAA, and for Commerce Department and other Federal publications (reprints of some of the written material are used throughout NOAA/NMFS for many purposes); (4) arranges for interviews of NMFS personnel with representatives of all media; (5) responds to inquiries from the press, radio and TV, and the general public; (6) maintains close contact with Regional Offices and

Centers on matters of public interest; (7) provides representation at certain fisheries functions throughout the United States; (8) coordinates or prepares brochures, pamphlets, and similar material; (9) participates in preparing material for local and national exhibits related to fisheries matters; and (10) covers newsworthy events as required in the various NMFS Regions.

VESSEL ACTIVITIES

The major NMFS fisheries research vessels (see table 2) have all been integrated into the NOAA fleet under operational control of the Office of Fleet Operations, National Ocean Survey. The Fleet Allocation Council (FAC) allocates use of individual vessels. FAC was reorganized during the year and now consists of three voting members with two advisory nonvoting members and an Executive Secretary. The Council is advised by a group composed of the Directors (or their appointees) of the various user agencies.

Townsend Cromwell and Miller Freeman. Work has begun on the Townsend Cromwell, and she will be operational before June 1975. Work on the Miller Freeman will begin as soon as bids are received and a contract is awarded; she should become operational in fall 1975.

MARINE FISHERIES ADVISORY COMMITTEE

The Marine Fisheries Advisory Committee (MAFAC) was established February 17, 1971, by the Secretary of Commerce under Reorganization Plan No. 4 of July 1970 and Executive Order 11007, Section 3b, Act of July 1, 1954 (15 U.S.C. 713-3(c)). The Committee Charter was renewed on January 3, 1973, as required by Public Law 92-463. MAFAC members are appointed by the Secretary and advise him on matters pertinent to the Department of Commerce's responsibilities for marine fisheries resources.

The Committee held three meetings during the year: February 5-8, in Washington, D.C.;

Table 2.--Fisheries research vessels

	Vessel	Length (ft.)	Home Port	General area of operations	Use (Programs emphasis)
1.	Albatross IV	187	Woods Hole, Mass.	NW. Atlantic	Resource Assessment
2.	Geo. M. Bowers	73	Miami, Fla.	SE. U.S. Coast (Inshore)	Invertebrate Assessment & Technology
3.	John N. Cobb	93	Seattle, Wash.	NE. Pacific	Resource Assessment & Technology
4.	Townsend Cromwell 1/	159	Honolulu, Hawaii	Central Pacific	Resource Assessment
5.	Delaware II	155	Sandy Hook (Highlands) N.J.	NW. Atlantic	Resource Assessment
6.	Miller Freeman 1/	215	Seattle, Wash.	Bering Sea, Gulf of Alaska	Energy-Related Biological Baseline Studies
7.	David Starr Jordan	171	San Diego, Calif.	Eastern Central Pacific	Resource Assessment
8.	Murre II	86	Auke Bay, Alaska	Alaska Coast (Inshore)	Ecology, Oceanography, & Resource Assessment
9.	Oregon	100	Kodiak, Alaska	Alaska Cont. Shelf	Groundfish Assessment
10.	Oregon II	170	Pascagoula, Miss.	Eastern Central Atlantic, Gulf of Mexico, & Caribbean	Resource Assessment
11.	Pribilof	222	Seattle, Wash.	Seattle to Pribilof Islands	Freight cargo carrier

1/ Undergoing reactivation; to become operational in mid- or late 1975.

The inactive Delaware II was returned to active duty in April 1974. Since then, the vessel has completed a full schedule of cruises. The Delaware II has been serving the needs of the Middle Atlantic Coastal Fisheries Center and the Marine Ecosystem Analysis program.

Earlier plans have been implemented for reactivating the fisheries research vessels

May 21-23, in Washington, D.C.; and September 18-20, 1974, in Woods Hole, Massachusetts. Three meetings of the MAFAC subcommittee on the National Fisheries Plan were held in conjunction with the MAFAC meetings on February 9, May 20, and September 18, 1974. The MAFAC subcommittee on Marine Recreational Fisheries met January 16, 1974, in Washington, D.C.

As of December 31, 1974, the Committee had 24 members (3 more are to be appointed). The membership was:

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Chairman: Robert M. White, Administrator
National Oceanic and Atmospheric Administration

Executive Secretary: Alfred J. Bilik
National Marine Fisheries Service

RESOURCE RESEARCH

The Office of Resource Research plans, develops, and manages national research programs designed to understand the ecology of living marine resources, the effects of environmental degradation on their existence, and the management options that facilitate optimum use of the resource and are consistent with national needs and goals. Research is conducted under six major programs: (1) MARMAP (Marine Resources Monitoring, Assessment, and Prediction) resource assessment program (includes fishery oceanography and fishery engineering activities); (2) life studies; (3) environmental investigations; (4) aquaculture; (5) marine recreational fisheries; and (6) marine mammals.

RESOURCE ASSESSMENT

Fish and shellfish stocks off the U.S. coast are an enormous renewable national resource; the annual harvest by foreign and U.S. fishermen currently averages 11 billion pounds. Scientists estimate that the potential annual catch from the U.S. coastal resource is between 20 and 40 billion pounds. These resources are subject to competitive harvesting by foreign and domestic fishermen. This situation has led to serious overfishing of at least 10 major commercial stocks. Another problem is allocation of resources between commercial and recreational fishermen. NMFS's Marine Resources Monitoring, Assessment, and Prediction program is designed to collect and analyze information necessary to solve these problems. MARMAP is a nationally coordinated resource assessment program that annually provides systematic assessments of the principal fish and shellfish stocks of interest to the United States. Assessments are made for groundfish and pelagic fish resources by sampling (in a standard manner) eggs, larvae, juveniles, and adults of the major stocks. This information is used to restore overfished stocks to former abundance levels and to assure optimal yields from other stocks. The MARMAP stock assessments support the United States in negotiations for management and allocation of stocks under the terms of 6 international commissions and 10 bilateral agreements. They also support domestic management programs in cooperation with States in three interstate commissions and four State-Federal programs. The principal elements of the MARMAP system include (1) resource surveys, (2) analyses of commercial and recreational fish catches, (3) fishery oceanography, and (4) fishery engineering.

Resource Surveys: Surveys of fish and shellfish adults, juveniles, eggs, and larvae monitor the effects of fishing on individual stocks and on the total finfish biomass. They provide information free of the serious sampling bias that is present in current catch data from fishing operations directed at single target species. For the surveys, nine NOAA fleet vessels are used. Surveys are also conducted cooperatively with other countries, universities, and State laboratories using government, private, and State research vessels. The year 1974 was the second year of MARMAP surveys for juvenile and adult groundfish stocks along the Atlantic coast from Nova Scotia to Florida. Standard methods for trawling and reporting data were used by NMFS fisheries centers at Woods Hole, Massachusetts, and Sandy Hook, New Jersey; the State of South Carolina Marine Resources Laboratory, and cooperating Polish, U.S.S.R., and West German vessels.

In the eastern Bering Sea, major assessment emphasis in 1974 continued on crab and groundfish resources. In the Gulf of Alaska, the Northwest Fisheries Center, Seattle, Washington, made surveys of groundfish, shrimp, and crabs. They also assessed the Pacific hake resource along the British Columbia, Washington, Oregon, and California coasts. From these efforts, a series of status-of-stocks reports was produced covering the major groundfish species in the Bering Sea and northeastern Pacific Ocean. These reports provided the basis for negotiations that were successful in protecting the productivity of these stocks by reducing foreign fishing in international waters off Alaska and the Pacific Northwest. Pelagic surveys using hydroacoustic methods revealed a continuing southward shift in hake abundance, first noted in 1973. The surveys indicated that annual monitoring of the abundance of the prerecruit hake stock is effective in predicting recruitment to the fishery and forecasting potential yield. Bering Sea crab surveys indicated that the abundance of king and tanner crabs had increased significantly over 1973 estimates.

The Southeast Fisheries Center, Miami, Florida, is making survey assessments of important fisheries off the southeast U.S. coast, in the Gulf of Mexico, and Caribbean including: Brazil/Guianas shrimp; Mexican shrimp; Bahamas spiny lobster; Caribbean snapper/grouper; Atlantic bluefin tuna; billfish; groundfish of the Gulf, Caribbean, and southeast U.S. coast; and calico scallop. Surveys in the Gulf of Mexico have demonstrated that croaker stocks are made up principally of 1- and 2-year-old fish. This

dominant species comprises 35 percent to 90 percent of the groundfish resource, depending on area, depth, and season. It is a fast-growing, short-lived fish that can support an expanding fishery. A Remote Underwater Fisheries Assessment System (RUFAS) equipped with TV and still photography cameras was used to locate commercial concentrations of scallops, clams, and coastal shrimp in the Caribbean Sea and fish concentrations on the slope along the southeast U.S. coast.

In the California Current, Eastern Tropical Pacific, and the Central and Western Pacific areas, resource surveys were made by the Southwest Fisheries Center, La Jolla, California. Cooperative surveys with the American Fisherman's Research Foundation, representing the West Coast albacore fishing industry, have been made since 1971. Survey results in 1974 showed that albacore tuna entering the U.S. fishery follow well-defined migration patterns related to the prevailing oceanographic frontal structure in offshore waters. This information resulted in extending the albacore fishery further offshore and in beginning the fishing earlier than the traditional starting time. (Other MARMAP surveys made off the California coast routinely in connection with California Cooperative Fisheries Investigations assess the abundance of anchovy, sardine, and mackerel stocks by collecting fish eggs and larvae.) Hydroacoustic assessments of adult fish are also made. An innovative approach has been used in stock recruitment investigations along the California coast to detect concentrations of phytoplankton that serve as larval fish food. This technique uses the feeding of larval anchovies as a shipboard bioassay to determine the environmental conditions which favor food availability, feeding activity, and hence high survival rates. This method offers an experimental link between marine food chain research and stock and recruitment predictions in fisheries.

The Atlantic Estuarine Fisheries Center, Beaufort, North Carolina, made trawl surveys in Gulf coast and southeast Atlantic coast estuaries to establish an index of juvenile menhaden abundance. Special surveys along the southeast U.S. coast using direct observations with SCUBA were made to learn how artificial reefs affect fish abundance and distribution.

In the Mid-Atlantic Bight region of the east U.S. coast, the Middle Atlantic Coastal Fisheries Center together with the States of New York, New Jersey, and Virginia, completed an extensive cooperative survey of the abundance and distribution of surf clams. This fishery is now approaching an annual production level of 100 million pounds (meats). Monthly groundfish surveys were made from the western end of Raritan Bay to the Continental Shelf slope. These surveys have documented the offshore fall movement of fluke and other nearshore species and provided information on the distribution and abundance of juvenile hakes and drums.

The Northeast Fisheries Center encouraged the development of MARMAP-type groundfish surveys by member countries of the International Commission of the Northwest Atlantic Fisheries (ICNAF). Throughout the management area, ICNAF-member countries now plan to make standardized groundfish trawl surveys modeled after MARMAP methods. These surveys are essential to ICNAF for (1) adequately assessing the status of stocks and (2) providing a common scientific data base among the member nations, thereby facilitating the establishment of total allowable catch limits for the important stocks under management. The ICNAF larval herring survey is now in its third year and incorporates standard and comparable survey results by five nations to monitor the production, dispersal, and survival of larval herring on Georges Bank. This information is used to improve estimates of herring abundance by establishing the relation between spawning stock size, environmental factors, and reproductive success.

Fishery Analysis: MARMAP status of stock assessments and forecasts of changes in stock abundance and distribution require analyses of data collected from commercial and recreational fisheries (foreign and domestic) and from resource surveys. Based on these analyses, some 400 reports are issued each year including published scientific papers and reports to international fisheries commissions, interstate fisheries commissions, State regulatory agencies, other Federal agencies and industry. The first nationwide status-of-stocks report made by the MARMAP program in 1974 provides a synthesis of all available information on principal stocks of interest to the United States.

The Northwest Fisheries Center prepared a series of reports on the status of important groundfish stocks in the eastern Bering Sea. These reports were used in successfully negotiating an agreement with Japan to reduce substantially her groundfish and herring catches in that region in 1975-76. The foreign fisheries observer program was expanded to include the placing of U.S. observers aboard Soviet freezer-trawler vessels in the Gulf of Alaska. Estimates made by observers on Japanese trawling vessels in the eastern Bering Sea show that the incidental catch has contributed significantly to the drastic decline in the United States-Canadian halibut setline fishery. Estimates of Japanese mothership catches of Bristol Bay sockeye salmon were used in obtaining for the 1974 Bristol Bay run some additional protection from high-seas fishing. Detailed estimates of incidental catches of Pacific halibut by Japanese trawlers helped to develop Canada-Japan-United States recommendations for halibut conservation measures to be taken during 1975 in the eastern Bering Sea. Information on United States-Canadian salmon fisheries interceptions in 1972-73 was assembled for bilateral discussions scheduled in early 1975.

Progress has been made in assessment efforts for management of herring in southeast Alaska.

The Southwest Fisheries Center conducts fishery analysis research on tuna fisheries on a worldwide basis (Atlantic, Pacific, and Indian Oceans). It completed a generalized production model that estimates the maximum sustainable average annual yield of the South Pacific albacore tuna fishery. A comprehensive study of the population dynamics of North Pacific albacore has been initiated. The Honolulu Laboratory is continuing to study the feasibility of long-distance transport of live baitfish needed in developing a Hawaiian skipjack tuna fishery. A synopsis was made of the distribution, relative abundance, and movement of skipjack in the Pacific Ocean based on records of Japanese tuna longline catches. The status of exploited stocks of other tuna and tunalike resources of U.S. concern is monitored through systematic collection and analyses of fisheries data. These analyses formed a scientific basis for a cooperative program for development of tuna resources of central, south, and western Pacific. An annual estimate of the total U.S. catch of Atlantic tunas and tunalike fisheries was presented to the International Commission for Conservation of Atlantic Tuna (ICCAT). An analysis of alternative management systems for the eastern Pacific yellowfin tuna fishery was submitted to the International Tropical Tuna Commission (IATTC). Other Center studies concern the commercial fisheries of the California Current and Pacific Islands, and the recreational fisheries of California and Hawaii.

In the Gulf of Mexico, the Gulf Coastal Fisheries Center made studies to permit optimal harvesting and allocation of shrimp stocks. Improvements in analyses of landing statistics and in stock identification have been made and specifically include: (1) development of computerized data banks of catch and effort records on Gulf coast shrimp for 1959-74, and of catches of postlarval shrimp and associated invertebrates and larval fishes, and environmental data for 1960-73; and (2) detection of an enzyme that permits identification of specific shrimp stocks.

The Southeast Fisheries Center is continuing to analyze the composition, abundance, and distribution of the industrial bottomfish resources in the northern Gulf of Mexico and the extent of discarded fish bycatches in the Gulf shrimp fishery. Assessments on the status of shrimp and lobster stocks have been completed to support renegotiation of the United States-Brazil shrimp agreement and negotiations on the Bahamian spiny lobster fishery.

The Atlantic Estuarine Fisheries Center estimates stock sizes, fluctuations in abundance, and fishing rates in Atlantic and Gulf menhaden fisheries so that annual catches can be predicted and management plans formulated. The impacts of catches on various populations are evaluated. Improved estimates were made of effective fishing effort, adjusted catch per unit of effort, and maximum sustainable yields (MSY) for the Gulf and Atlantic menhaden. The Atlantic menhaden fishery is making a fast recovery from a low catch in 1969. This Center is also studying recreational and commercial harvests in fisheries on the subtropical outer Continental Shelf of the Carolinas to determine the productivity of resident stocks.

The Northeast Fisheries Center made assessments of the status of all fish stocks in the northwest Atlantic of commercial interest to the United States. Except for menhaden, these assessments include the total finfish and squid biomass in ICNAF management areas off the New England coast. Productivity studies of this biomass provided the basis for estimating the 1975 total allowable catch (TAC) levels for 20 stocks managed by ICNAF and for closing selected areas to bottom trawling by large foreign trawlers. Reassessments of herring stocks resulted in a significant reduction in the 1975 TAC for the Gulf of Maine herring.

Fishery Oceanography: The physical and chemical properties of the ocean (currents, temperature, nutrients) directly or indirectly affect living resources, but only rudimentary knowledge is available on the controlling mechanisms and rate processes. Accurate predictions are needed of the impacts of man's activities (fishing, pollution, environmental modification) and natural environment processes on living resources and the production potential of the marine ecosystem.

MARMAP Fishery Oceanography activities are directed to: (1) providing descriptions and analyses of marine organic production systems and of oceanographic conditions and (2) defining the influence of environmental factors on the distribution and abundance of living marine resources. These objectives are accomplished by analyzing physical, chemical, and biological oceanographic data collected by MARMAP surveys and research activities of other agencies (e.g., commercial ships of opportunity, Navy, Coast Guard, States, and universities). Special MARMAP surveys are made with the U.S.S.R. to obtain organic production and larval survival data for development of system models for specific areas (Northwest Atlantic, Northeast Pacific).

Accomplishments in fishery oceanography in 1974 included:

(1) A study that showed that variance in recruitment of menhaden south of Cape Hatteras was positively correlated with surface wind drift during January and February of the natal year of the year-class. Forty percent of the variance of recruitment since 1955 from the recruitment/spawning stock curve during 1955-71 can be explained by the Zonal Ekman transport data. Additional environmental variables are being tested in an attempt to explain the remaining variance.

(2) Establishment of schedules and procedures in processing and quality control editing of environmental data from MARMAP surveys. Processing has been improved to permit greater flexibility and diversity in computer display of data and to provide publishable quality figures.

(3) A pilot study was completed, using 1973 data, that evaluates ocean-atmospheric coupling of environmental variables that influence albacore tuna migration patterns. Using a 25-year data base from the North Pacific, a computer program was prepared for multiple correlation analysis that compares geographic variations in the fishery and the distribution of environmental variables. Oceanic fronts have been found to be most significant oceanic feature influencing albacore migrations as schools approach the North American coast. As a result, the albacore fishery has been extended farther offshore and earlier by 1 to 2 months.

(4) Emphasis was placed upon understanding the ecology and hydrography of Alaska estuaries in order to predict how industrial development affects the habitat. A major accomplishment has been the completion of the International North Pacific Fisheries Commission Joint Report on the oceanic habitat for salmon.

Fisheries Engineering: Prior to the 1960's, significant depletion of fish stocks was measured in decades. Stocks now may be overfished 2 to 3 years after a fishery begins. Accordingly, real-time assessments are critical and depend upon applying advanced technology for collecting resource information through more efficient and rapid surveys. Technology developments are also needed to reduce waste of nontarget species taken during fishing.

Fishery Engineering accomplishments in 1974 included the following systems and/or techniques designed to improve assessment and identification of fish stocks:

(1) An advanced towed hydroacoustic data acquisition and calibration system has been developed. This system began to be used as an assessment tool for the Pacific hake fishery. Hydroacoustic methods for assessment of pelagic species of the Northwest Atlantic were studied cooperatively aboard Soviet and Polish research vessels, and standard procedures for calibration were established. Agreements have been made for the continuance of this cooperative work.

(2) The NOAA/NASA SkyLab experiment, using aircraft and spacecraft sensors to predict the potential and probable areas of gamefish concentration, was successfully completed and showed a correlation between white marlin abundance and chlorophyll distribution, sea-surface temperature, and turbidity.

(3) The NMFS, NASA, and the menhaden fishing industry completed a cooperative study in 1973 and now have an earth resources technology satellite (ERTS) follow-on experiment to test and refine the models developed, as well as to expand the area of study to a larger portion of the Gulf of Mexico.

LIFE STUDIES

Research continued on a broad range of subjects, including the growth, feeding, migration, reproduction, biochemistry, pathology, classification, behavior, anatomy, and physiology of marine fish and shellfish. These studies provide basic biological information necessary for fisheries management.

Major research during the year at the National Systematics Laboratory included: (1) original anatomical research on the taxonomy of giant tunas, Thunnus; (2) taxonomic revision of the Spanish mackerels, Scomberomorus; and (3) studies on gadoid and ophidioid fishes, important constituents of the Continental Slope.

The Gulf Coastal Fisheries Center developed methods for sampling eggs, larvae, and postlarvae of spotted sea trout and began studying their migrations.

The Northeast Fisheries Center investigated deep-sea red crab populations to learn the distribution and life history of the species on the Continental Slope from Maryland to Georges Bank. Substantial quantities were found in depths of 175 to 300 fathoms.

At the Atlantic Estuarine Fisheries Center studies were made to determine if the migration and reproduction of menhaden were related to conditions along the South Atlantic States in the nearshore zone.

ENVIRONMENTAL INVESTIGATIONS

The long-term objectives of environmental and ecological research are to determine the factors influencing the production of living marine organisms and to establish baseline data in order to evaluate the ecological impact of manmade and natural alterations. Also investigated are the cycling of pollutants through food chains and their effects on marine ecosystems and organisms.

In 1974 these investigations were made at most of the NMFS Centers and laboratories. (1) At the Atlantic Estuarine Fisheries Center, emphasis was on the assessment of community structure, biomass composition, and trophic energetics of the ecosystem; the determination of major pathways and rates of flux for contaminants

of human origin, especially heavy metals, radionuclides, and pesticides within the ecosystem; and, determination of organismic responses to important contaminative additions, alone and in combinations, over the entire range of environmental variation to which the organisms are normally exposed. (2) The Northwest Fisheries Center, Seattle, Washington, carried out research involving relationships between petroleum oil and aquatic organisms, the ecological effects of dams, and began to establish baselines of littoral and outer Continental Shelf organisms for later comparison after offshore drilling takes place. (3) The Middle Atlantic Coastal Fisheries Center completed the first successful short- and long-term utilization of the Center's chronic exposure testing facility which was constructed last year at Milford, Connecticut. Sublethal levels of various pollutants were tested using lobsters, blue crabs, scallops, and fishes such as cunner, tautog, striped bass as test animals. This Center, through its Ecosystems Investigations, completed seasonally oriented field operations, with emphasis on the New York Bight area, with regard to benthic-zooplankton food chain studies, physiological responses to toxins and organic wastes, and zoogeographic distribution of benthic populations. (4) At the Gulf Coastal Fisheries Center, research determined the changes in the marine environment caused by activities such as dredging and filling, bulkheading, and waste disposal.

AQUACULTURE

The aquaculture program carries out research needed to make commercial production of selected species economically feasible and, thereby, encourage private investors to produce harvestable crops of marine life under controlled conditions. These crops are needed to supplement the supply of traditional fish and shellfish resources that will be in short supply in the future. In addition, the research aims to improve natural stocks and bolster catches for both commercial and recreational fishermen. Current work involves culture of Pacific salmon and penaeid shrimp.

At the Gulf Coastal Fisheries Center, research seeks solution of key problems in several critical areas of shrimp culture. Emphasis is placed on problems related to sexual maturation and spawning, diagnosis and treatment of disease, understanding the nutritional requirements of shrimp, and on the development of high-intensity culture systems that require low-energy input and incorporate recycling of wastes.

Salmon culture research under the purview of the Northwest Fisheries Center involves two different techniques. At the Manchester (Seattle) facility, studies are centered on improving the efficiency of methods for commercial production of salmon in saltwater floating pens (pen-rearing) in Puget Sound. Activities include: operation of salt- and freshwater rearing systems, evaluation of experimental feeds, selective breeding, and diagnosis and treatment of saltwater salmon diseases. Salmon culture research at the Auke Bay Fisheries Laboratory, Auke Bay, Alaska, concentrates on new methods for enhancement and rehabilitation of Pacific salmon runs, and is laying the biological and technological foundation for a new salmon aquaculture industry based on ocean ranching--proprietary harvest of the fish that return to hatcheries. Specific research includes: spawning and incubation systems (development and evaluation of low-cost gravel and turf incubators), supplemental rearing systems (floating feedlots--pens and raceways), natural rearing systems (lake and inshore nursery areas), and genetic problems.

Significant accomplishments:

(1) Successful rearing of high densities of penaeid shrimp postlarvae (15,000/m^2) or juveniles (300/m^2) in closed systems.

(2) Training of 12 foreign scientists (representing 10 nations) in biological techniques for shrimp culture at the Gulf Coastal Fisheries Center.

(3) Initiation of experimental manipulation of endocrine systems of artificially reared penaeid shrimp to induce reproductive processes on demand.

(4) Development of a rapid, low-cost mass innoculation technique for the prevention of vibriosis in juvenile coho salmon.

(5) Commercial production in 1973-74 of 350 metric tons of pen-reared salmon in Puget Sound, Washington.

(6) Development, evaluation, and usage of innovative salmon incubators using gravel and artificial turf.

(7) Economically encouraging returns (1 percent) of adult pink and chum salmon after release as unfed fry into marine nursery areas from pilot gravel incubator hatcheries.

(8) Passage of the 1974 Alaska Non-Profit Private Hatchery Law has laid the foundation for a new salmon aquaculture industry based on concepts of ocean ranching pioneered by the Auke Bay Fisheries Laboratory.

MARINE RECREATIONAL FISHERIES

Research on species caught by marine sport anglers has been undertaken at all major NMFS laboratories. Following is a capsule version of

specific activities in 1974:

(1) The Northwest Fisheries Center surveyed the currently underutilized sport fishery resources of Puget Sound, other than salmon, and disseminated the information to marine anglers.

(2) The Southwest Fisheries Center and the California Department of Fish and Game started to cooperatively study the status of major recreational species off southern California. In this first year of the project, substantial progress was made with the publication of stock assessments of 10 major recreational species.

(3) The Hawaii Laboratory collected and analyzed statistics on billfish catches, both commercial and recreational, and collaborated with the Hawaii Division of Fish and Game on plans to collect catch and effort data on other recreational species.

(4) In cooperation with the Tyee Sportsman's Club, University of California, and the California Department of Fish and Game, the Tiburon Laboratory began a new project on saltwater rearing of coho salmon.

(5) Gulf Coastal Fisheries Center laboratories at Panama City, Florida, and Port Aransas, Texas, are gathering and analyzing basic data on the recreational fisheries--what is caught, where, how much, and by whom.

(6) The Southeast Fisheries Center is the focal point for two very important activities: (a) research on the Atlantic bluefin tuna, which was begun in 1974, and (b) the billfish program. The initial thrust of the bluefin program is to acquire catch information on both sport and commercial fisheries and collect biological data on both giant and school bluefin, as well as increase tagging and recovery efforts. The billfish program is a continuing activity undertaken to collect biological information and to make assessments of stocks.

(7) The Atlantic Estuarine Fisheries Center completed in 1974 the popular and productive research on artificial reefs. It will continue advisory services to States and individuals on placement and construction procedures for reefs. This research was replaced by a new project designed to obtain biological and statistical data on the offshore party boat fishery.

(8) Significant aspects of the resource assessment work and biological investigations at the Middle Atlantic Coastal Fisheries Center are geared toward recreational fisheries needs. A new thrust in 1974 was the formation of a data processing and analysis unit to handle recreational fishing information. In addition to gathering behavioral data and assessment of nearshore species, NMFS began in 1974 a comprehensive biostatistical monitoring activity in Ocean City, Maryland.

(9) The Northeast Fisheries Center, Narragansett, Rhode Island, is studying the migration, distribution, and life history of large oceanic gamefish, especially sharks. This activity continues in close cooperation with the Woods Hole Oceanographic Institution.

MARINE MAMMALS

The NMFS is developing research programs to conserve and protect porpoises, whales, seals, and sea lions. Major emphasis in 1974 was placed on assessing porpoise populations in the eastern tropical Pacific yellowfin tuna fishery area and reducing incidental porpoise mortalities. Techniques tested include methods of holding nets open to prevent porpoise drownings during net collapses, enlarging the volume of nets by tapering to decrease crowding, modifying the porpoise safety panel, and using various mesh sizes to reduce the entanglement of porpoises. Regulations now governing the fishery are based on techniques tested by NMFS. Preliminary estimates of certain porpoise populations were made in 1974. Although the results gave only rough estimates, these populations do not appear to be in danger of extinction.

The NMFS scientists are developing independent U.S. estimates of whale stocks needed for negotiating quotas and other conservation measures at the International Whaling Commission meeting. The scientists have examined management schemes for protecting certain stocks and setting harvest limits for others. In other whale research programs, NMFS made censuses of bowhead, killer, and gray whales.

The role of disease and parasites in the mortality of northern fur seals was studied intensively during 1974 on the Pribilof Islands. Analyses are not yet complete, but several viral and bacterial diseases have been found in the fur seal herd.

The responsibilities of NMFS under the Marine Mammal Protection Act of 1972 are reported under Resource Management (see p. 25).

RESOURCE UTILIZATION

The Office of Resource Utilization plans, develops, evaluates, and manages these programs:

(1) Economic and marketing research and analysis related to resource management and utilization, including demand and supply projections, benefit cost studies, and foreign trade.

(2) Collection, analysis, compilation, and dissemination of fishery statistics and market

news information.

(3) Financial assistance to the fishing industry in the form of loans, and mortgage and loan insurance.

(4) Microbiological, chemical, and technological research to improve the quality and use of fishery resources.

(5) Voluntary national inspection and certification of fishery products.

(6) Marketing practices improvement and alleviation of extraordinary short-term supply-demand imbalances.

(7) Fishery education services.

(8) National research programs in fishery products technology.

The Office of Resource Utilization was reorganized effective November 11, 1974. The number of divisions is decreased from 7 to these 5: Industry and Marketing Services, Fishery Products Inspection and Safety, Statistics and Market News, Economics and Marketing, and Financial Assistance. Functions were so aligned that the primary responsibilities of the Office are for national oversight of its programs and for assuring that national programs are in tune with regional constituency needs. The Office also supervises Northeast, Pacific, and Southeast Utilization Research Centers and a National Fishery Education Center.

ECONOMICS AND MARKETING RESEARCH

The Economics and Marketing Research Division was formed by consolidating the former Economic Research Division and the Marketing Research Unit of the Market Research and Services Division. The Division's three major program areas are: (1) fisheries management economics, (2) fisheries development economics, and (3) marketing research.

Economics research focuses on the demand for and supply of fish products. During 1974, the Division examined the impact of the energy crisis on U.S. fisheries, undertook studies to determine the profitability of selected fisheries, and monitored foreign investment in U.S. fishing operations. Analyses of problems and opportunities in U.S. fisheries provide a basis for policy formulation and program evaluation, and they are used by the fishing industry, investors, financial institutions, and the general public.

Market research is designed to provide current information on economic conditions affecting the fishing industry and consumers. Results of this market intelligence function are published as scheduled market reports, economic impact studies, and a monthly retail price survey. Analyses and forecasts of market conditions are published in the Department of Agriculture's National Food Situation. The scheduled market reports include analyses of current market factors--prices, landings, imports, exports, production, inventories, and consumption.

Significant accomplishments:

Fisheries Management and Development Economics:

(1) Studies of the economic impact of fuel price increases and supply shortages on the U.S. fishing industry.

(2) Cost and earnings studies of the Florida spiny lobster fishery and New England squid fishery.

(3) Review of insurance problems faced by fishing vessel owners.

(4) Completion of an initial aquacultural economic bibliography.

(5) Analysis of the economic feasibility for increased U.S. production of Alaska groundfish.

Market Research:

(6) Three issues of each of the following market review and outlook reports were published: (a) Shellfish Market Review and Outlook; (b) Food Fish Market Review and Outlook; (c) Industrial Fishery Products Market Review and Outlook.

(7) Fourteen issues of Operation Fish Watch, a retail price survey of fish and meat products, were published.

FISHERIES DEVELOPMENT

A special staff group was established within the Office of Resource Utilization to coordinate with industry the activities concerned with increasing fish and shellfish supplies from domestic fishery resources. This included harvesting, processing, and marketing, and such support services as economic evaluations, statistical and inspection services, financial assistance programs, and foreign trade services.

Fishery development accomplishments for target species:

(1) Offshore Crabs--Progress in Northeast offshore crab fishery development included clarification of the available resource through surveys and tagging studies. Processing technology was made available and adapted to the needs of

two Northeast plants. Improvements in harvesting included the development of equipment for butchering and freezing at sea.

(2) Croaker--Brought together United States processors and Japanese interests to mutually develop the croaker fishery to produce surimi (minced fish) for Japanese markets. An economic evaluation of the croaker-surimi opportunity sparked the interest of certain Gulf of Mexico producers. At the same time, Japanese interests were made aware of our croaker resource as a potential source for surimi, an important fishery product in Japan. These efforts resulted in direct negotiations between certain Japanese and American firms to mutually establish a United States-based surimi processing facility that would use Gulf croakers.

(3) Alaska Groundfish--A joint industry-NMFS venture determined the prospects for a domestic fishery for Alaska groundfish. An exploratory fishing cruise was completed in addition to processing trials, preliminary economic analyses, and marketing surveys. Research technologists worked onboard and in the laboratory to evaluate the catch from the standpoint of keeping quality, processing requirements, and potential for filleted and minced fish production. The findings were published by the Northwest Fisheries Center in a report titled, "Preliminary Results of an Industry-Government Venture on Alaska Groundfish."

STATISTICS AND MARKET NEWS

The collection and dissemination of data on commercial fisheries and marine recreational fisheries are carried out by the headquarters staff and by 43 field stations under the following three major statistical programs:

Commercial Fisheries Statistics--NMFS collects, stores, and publishes statistics on the U.S. commercial fishing industry. Included are the volume and value of the commercial landings of fish and shellfish by species, region, State, and type of gear; number of fishing craft and gear operating in the fisheries; production of processed fishery products; employment on fishing craft and in wholesale and fish processing establishments; and per capita consumption of commercial fishery products.

Marine Recreational Fisheries Statistics--NMFS collects and publishes statistics on the Nation's saltwater recreational fisheries.

Current Market Information--NMFS provides current information on market activities, cold storage holdings, imports, and exports.

Significant accomplishments:

(1) Commercial fisheries data were published in about 300 monthly, quarterly, and annual statistical bulletins that were distributed to private industry; Federal, State, and local government agencies; libraries, universities, research institutions; foreign industry and governments; and U.S. Embassies.

(2) Several thousand special requests for commercial fishing information or special data were answered.

(3) A study of data collection techniques in the Gulf and Atlantic Coast States was completed in cooperation with the NOAA Office of Management and Computer Systems.

(4) The Florida Department of Natural Resources was helped in developing an ADP program that would enable the State to process its own landings bulletins. (Of the 15 State landings bulletins, only those for Maryland and Texas are now tabulated by hand and typed.)

(5) Assistance was provided Washington and Oregon to record, on magnetic tape, data on fishery landings, employment, fishing craft, and gear. This helped the States process the type of data they needed from these files and provided NMFS more efficient access to the data.

(6) Data were collected on marine recreational fishing in the Northeast Region. These data will be published in calendar year 1975. A similar survey to be made in calendar year 1975 has been started for the Southeast Region.

(7) Five Market News reporting centers issued reports three times a week containing data on current market prices, landings, imports, holdings, and movements of fishery products, as well as other information to promote efficient and orderly marketing of fish and shellfish and products prepared from them. This service has over 10,000 subscribers.

(8) The Statistics and Market News Division was reviewed in 1974 by the General Accounting Office (GAO). The GAO recommended to the Department of Commerce that Market News reports be sold. NOAA concurred with this recommendation, and effective July 1, 1975, the reports will go on sale. Details of the Market News subscription service are scheduled to appear in the Federal Register early in 1975.

(9) State-Federal cooperation in statistics: several cooperative statistics efforts were either started or continued in 1974. In the Southeast, with the help of the Statistics and Market News Division, the State of Florida took over the production of landings bulletins by computer; and North Carolina and NMFS set up a market information collection and reporting system funded by the State and managed by NMFS. On the West Coast,

NMFS is cooperating with the States of California, Oregon, and Washington, in developing a coastwide fisheries data system. In the Northeast, some States are developing data collection and processing capabilities with the help of NMFS funding. Finally, in 1974 work has begun toward development of a fisheries statistics policy that calls for State-Federal cooperation in the collection, processing, and dissemination of fisheries statistics.

INDUSTRY AND MARKETING SERVICES

The Industry and Marketing Services Division was formed and incorporates Fishery Products Research (includes the coordinator of the activities of three resource utilization centers) and the Market Development and Consumer Education function of the former Market Research and Services Division.

Fishery products research in 1974 focused on latent resources and fishery development, improved feeds and nutrition for aquaculture, product quality and safety, microconstituents in seafoods, and waste control in seafood processing.

Significant accomplishments:

Fishery Products Research:

(1) Issued a new publication, Current Information of Fishery Pollution Abatement Technology. Issues during the year (a) identified agencies and institutions in the United States involved in fishery pollution abatement technology research or regulations; (b) addressed problems and interpretations of the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) as applied to seafood processors; and (c) provided information about fishery pollution abatement projects obtained from a national survey conducted in the spring of 1974. Future issues will have results of NMFS waste treatment studies, analytical monitoring techniques, and interpretation of EPA effluent guidelines for seafood processors.

(2) Held five export marketing seminars to help the U.S. fishing industry develop overseas markets for its products by (a) acquainting U.S. producers and processors with the methodology of exporting, (b) providing information about available export services in the Federal Government, and (c) providing essential information on various countries.

(3) Co-sponsored with the USDA an international food trade show in Tokyo, Japan, to establish or expand foreign markets for United States fishery products that are underutilized in the United States, but which have a large potential or existing markets overseas. Twenty-one U.S. fishery firms participated.

(4) As a result of the cost-price squeeze, started an emergency marketing program in November to stimulate demand for fishery products in oversupply and to help the industry develop a more effective organization to deal with future marketing needs.

(5) Completed a 2-foot by 3-foot resource wall chart, "Mollusks and Crustaceans of Coastal United States," that shows various species of shellfish in color. In addition, published a recipe booklet, "Great Catsby," containing recipes for catfish.

(6) Carried on a sustained marketing effort to develop markets for underutilized rock shrimp by NMFS and State marketing staffs, and established this product as a regular menu item in at least three major restaurant chains. Consultations by marketing personnel and fish cookery demonstration and menu planning food service personnel built a demand for more than 3 million pounds during 1974.

(7) Stimulated demand for shrimp through major marketing efforts. Primary emphasis was in the coastal producing States. NMFS marketing personnel worked with State Cooperative Extension Offices, various State marketing offices, major retail chains, supermarkets, restaurants, and institutions. Total national efforts by NMFS marketing and other cooperators at the consumer's level produced an increase of nearly 4 percent over the 1973 usage of shrimp products.

FINANCIAL ASSISTANCE

The NMFS administers four financial assistance programs--one is under a moratorium. These programs were established to help make the harvesting segment of the fishing industry more efficient and competitive.

The Fishing Vessel Obligation Guarantee program (46 U.S.C. 1271 et seq.) was implemented during the year with publication of permanent program regulations (50 CFR Part 255). Efforts were concentrated on trying to develop capital alternatives to conventional bank lenders, because 1974's restrictive monetary policies made conventional lending funds very scarce and inflation discouraged long-term, fixed-interest-rate, conventional loans except at historically high interest rates. The ability to reach the general debt instrument market was developed during the year and fisheries applicants are now being placed with investors at favorable interest rates. Over $10 million in applications was received during 1974.

The Capital Construction Fund (CCF) tax deferral program (46 U.S.C. 1177) expanded rapidly in 1974. Although permanent procedure regulations have been delayed pending issuance

of the Internal Revenue Service's joint tax regulations, this program is operational. By year end, over 575 individual CCF agreements had been executed. Under these agreements over $60 million has been withdrawn for new fishing vessel construction and improvements.

Activity under the Fishermen's Guaranty Fund (22 U.S.C. 1971-1977) was minimal during 1974 because only one U.S. flag vessel was seized by a foreign country claiming territorial jurisdiction not recognized by the United States. The Fishermen's Guarantee Fund Agreements included 160 vessels for the year beginning July 1, 1974.

The financial assistance programs, particularly the Fisheries Loan Fund, have been only partially successful in meeting their objective--increase the efficiency and competitiveness of the harvesting segment of the industry. The Fisheries Loan Fund is being restructured, and in the interim an administrative moratorium has been declared on loans under this fund. The moratorium remained in effect during 1974.

A conditional fisheries mechanism (50 CFR Part 251) was implemented during the year which will restrict the availability of financial assistance programs in fisheries which have excessive vessel capacity. In such fisheries, assistance will be restricted to projects which do not add significant vessel capacity to those fisheries.

FISHERY PRODUCTS INSPECTION AND SAFETY

The missions of the Fishery Products Inspection and Safety Division are to: (1) Provide an impartial seafood inspection and product certification system on a voluntary and reimbursable basis to assist national and international trading in fishery products. (2) Provide consumers with assured quality choices in the marketplace, as well as safety assurances, through protection against contaminated fishery products. (3) Provide a basis and tools to help industry upgrade plant sanitation and improve product quality as a means of preparation for mandatory inspection of fishery products/plants.

Significant accomplishments:

(1) A new inspection service, the Sanitarily Inspected Fish Establishment (SIFE) program, was developed and made available. This service provides an initial sanitation survey, plant certification, and contract sanitation inspections to interested fishery product processors.

(2) A new Memorandum of Understanding (MOU) was signed with the Food and Drug Administration. MOU documents FDA recognition of NMFS expertise in seafood inspection and provides a cooperative working agreement on fish and seafood inspection and certification activities.

(3) Educational materials on the value of inspected products for consumers and the fishery trade were developed and distributed. Eight publications designed for consumers and one for the trade were created and distributed. Three educational slide presentations, one for consumers and two for the trade were prepared and presented to audiences throughout the United States. Television and radio spot announcements on DOC inspection services were prepared for use in 1975.

(4) An International Standard for Canned Tuna and Bonito was completed and recommended to the international Codex Alimentarius Commission. The Standard was approved and has been distributed to countries for adoption as part of their national regulations, after which it will serve as the basis for international trading in these commodities.

RESOURCE MANAGEMENT

The Office of Resource Management carries out a variety of fisheries management functions, a great many of which result from new or enlarged responsibilities acquired by NMFS when it was transferred to the Department of Commerce. The Office plans, develops, and evaluates programs to improve State and Federal management and protection of fisheries, marine mammals, endangered species, and their environments. There is work cooperation with a number of other Federal agencies, including the Department of State, Coast Guard, Environmental Protection Agency, Army Corps of Engineers, Fish and Wildlife Service, Marine Mammal Commission, and Bureau of Customs. Close cooperation is also required with interstate bodies such as the Atlantic States Marine Fisheries Commission, Gulf States Marine Fisheries Commission, Pacific Marine Fisheries Commission, Great Lakes Fishery Commission, and Council of State Governments; also with the fisheries and game agencies of the 50 States, Puerto Rico, Virgin Islands, Guam, and American Samoa. Prominent conservation organizations are consulted frequently: The International Association of Game, Fish and Conservation Commissioners; American Fisheries Society; Sport Fishing Institute; National Wildlife Federation; Wildlife Management Institute; and Wildlife Society. Also, NMFS meets frequently with Monitor Inc., a consortium of private societies for animal protection and conservation. The Office is organized into four divisions: (1) Environmental Assessment, (2) Fisheries Management, (3) Law Enforcement, and (4) Marine Mammals and Endangered Species. It

also supervises the Columbia River Fisheries Program and is responsible for Pribilof Islands Management.

ENVIRONMENTAL ASSESSMENT

The Environmental Assessment Division is concerned with the protection and improvement of marine, estuarine, inland commercial, and certain anadromous fisheries resources and their habitats. Through provisions of the Fish and Wildlife Coordination Act, the National Environmental Policy Act of 1969, the Federal Water Pollution Control Act Amendments of 1972, and other statutes, the Division determines how environmental alterations affect the living resources that concern NMFS. In this role, the Division: (1) Reviews and evaluates public notices pertaining to permit applications submitted to the Army Corps of Engineers under Section 10 of the Rivers and Harbors Act of 1899. (2) Screens and responds to ocean dumping and pollutant discharge permit applications submitted to the Environmental Protection Agency or designated State agencies. (3) Reviews and evaluates other permits and licenses issued by Federal agencies such as the U.S. Forest Service, Coast Guard, and Bureau of Land Management. (4) Reviews and evaluates Environmental Impact Statements. (5) Screens Federal water development project plans and assesses potential impacts of the projects, so as to avoid, reduce, or mitigate damage to fisheries resources and, where possible, improve fisheries benefits. (6) Other important functions include serving on multi-agency technical assistance committees formulated to evaluate or manage specific water-dependent projects; participating in the planning and production of comprehensive land and water resource studies; and reviewing and offering technical assistance in the development of criteria, guidelines, regulations, etc., of other agencies whose actions affect living marine resources.

During the past year, to better reflect its broadening role and responsibilities under recent environmental legislation, the name of the Division was changed from the Water Resources Management Division to the Environmental Assessment Division.

Significant accomplishments:

(1) A unit to coordinate energy-related projects was set up in Washington, D.C., to assure that priority is given to assessing impacts and making recommendations on projects aimed at establishing the Nation's independence in the production of energy.

(2) Through coordinated efforts with NMFS research units and the Fish and Wildlife Service, the Division successfully protested issuance of a variance from best practical waste heat discharge technology for the Millstone Nuclear Generating facility in Connecticut. The variance was rescinded pending further biological investigation into the impact of discharging 1.9 million gallons per minute of heated effluent into the receiving waters.

(3) In the Southeast, Division expertise contributed markedly to the landmark court decision on the massive Harbor Isles development in Florida. The decision established Federal jurisdiction over projects sited above mean high tide that could indirectly affect navigable waters.

FISHERIES MANAGEMENT

During the past year, the name of this Division was changed from the Office of State-Federal Relationships to reflect a much broader scope of responsibilities. State cooperation continued to be sought in developing comprehensive management plans for fisheries and fisheries resources, and in overcoming problems caused as a consequence of overlapping and frequently conflicting fisheries regulations. Beyond that, however, the division is preparing to assume whatever responsibilities may emerge as a consequence of some form of extended fisheries jurisdiction. This latter initiative builds logically upon the State-Federal groundwork that has continued throughout 1974.

Additionally, the division administers the NMFS grant-in-aid program which combines the financial resources of the States and the Federal Government in a cooperative effort for carrying out research and development of the commercial fisheries of the Nation, and for the conservation, development, and enhancement of anadromous fisheries and the fish in the Great Lakes that ascend streams to spawn. The program is authorized under the Commercial Fisheries Research and Development Act, P.L. 88-309 as amended.

Significant accomplishments:

(1) A contract was negotiated with the Council of State Governments for the purpose of reviewing present fisheries management practices in all the coastal States. A national task force of State fisheries administrators and State legislators has been assembled to accomplish this task, and to develop a "model" uniform State fisheries management code which would combine the best experience and practices for recommended adoption by all State legislatures.

(2) About 40 projects were completed under the grant-in-aid program, including rehabilitation of oyster grounds in Alabama, Louisiana, and Mississippi that were damaged by excessive flood waters in spring 1974; a comprehensive survey of the fisheries resources off the California coast; construction of a coho and Atlantic

salmon hatchery in New Hampshire; publication of stream catalogues for Washington coastal drainages; construction of commercial fishing facilities at Puerto Rico fishing ports; and assessment of certain marine fisheries resources and supporting environments. About 30 scientific publications resulted from this research.

(3) Regional State-Federal activities continued during 1974. A multistate uniform opening date has been established by California, Oregon, and Washington for the Dungeness crab fisheries, to take effect the next fishing season. Four States in the Gulf of Mexico established uniform opening and closing dates in 1974 for the menhaden fishery. Uniform regulations are being adopted by the 11 States involved in the American lobster fishery. Mesh regulations controlling the harvest of shrimp in the Gulf of Maine were adopted by Massachusetts, New Hampshire, and Maine and are now in effect.

LAW ENFORCEMENT

Fisheries enforcement in NMFS (1) monitors domestic and foreign fisheries operations consonant with the national goal of conservation of living marine resources as the major objective in the establishment of various laws and regulations concerning fisheries; (2) ensures compliance with provisions of 21 international treaties and agreements; and (3) guards against incursions into U.S. territorial waters and contiguous fisheries zone by foreign fishermen. Enforcement activities at sea are largely accomplished in cooperation with the U.S. Coast Guard. The Coast Guard provides aerial and surface patrol facilities; NMFS Special Agents provide enforcement and fisheries expertise.

Surveillance (1) provides knowledge of the innovations and trends in foreign fisheries operations, (2) estimates catch by quantity and species, and (3) permits timely assessment of fleet composition and movement. This information is used in formulating U.S. fisheries policy and establishes a sound basis for fisheries negotiations with other nations.

Regional enforcement and surveillance emphasis is directed toward defined problem areas. Numerous foreign fisheries violations of the U.S. jurisdictional waters off the coast of Alaska stress the need for constant aerial and surface patrols in that region.

Protection of salmon migrations under terms of international agreements is a primary concern in the Pacific Northwest.

Major efforts in the Southwest are toward gaining compliance with yellowfin tuna regulations.

The southeast region is actively concerned with enforcement of the Marine Mammal Protection Act and the Endangered Species Act provisions. Also, this region administers the provisions of the Offshore Shrimp Fisheries Act, which concerns United States shrimpers fishing in waters off the coast of Brazil.

International agreements affecting the Northeast Atlantic area require increased attention to assure compliance with annual and species quotas, other regulations, and restrictions regarding the taking of American lobsters by foreign fishermen on the U.S. Continental Shelf.

Enforcement of the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973 were major concerns in 1974. These Acts required enforcement of provisions concerning the taking, possession, importation, and exportation of certain marine mammals, endangered species, and related products.

The enforcement of Federal statutes regarding the possession and transportation of illegally taken fish and wildlife, and the development and promulgation of regulations authorized by various international compacts are additional responsibilities. Cooperative working agreements with State and other Federal agencies have been established wherever such arrangements facilitate achieving program objectives.

Significant accomplishments:

(1) Enforcement actions related to the following: (a) seizure of 13 foreign vessels in violation of fisheries treaties or regulations, resulting in penalties in excess of $1,908,000; (b) investigation of 152 cases involving marine mammals and related products, including seizures of various quantities of stuffed seals, sealskins, and articles of clothing made from sealskins, in violation of the Marine Mammal Protection Act of 1972; (c) investigations of 92 cases involving endangered species and related products, including seizures of various quantities of sperm whale oil and teeth, raw baleen, and scrimshaw; one precedent-setting case also resulted in the assessment of a fine of $5,000 in addition to the forfeiture of the seized contraband.

(2) Surveillance activities accounted for gross sightings of 17,698 fishing vessels in the various controlled fishing areas. Enforcement agents made boarding inspections of 497 foreign and 272 domestic fishing vessels. These activities were the outcome of 1,378 days and 245,130 miles of surface patrols, and 3,302 hours and 515,794 miles of aerial patrols.

(3) Cooperative enforcement agreements with five coastal States were negotiated under the Marine Mammal Protection Act, valued in the aggregate at $442,800.

(4) Regulations implementing the Offshore Shrimp Fisheries Act of 1973 (which implements a treaty between the United States and Brazil concerning the conservation of shrimp resources in certain defined waters off Brazil) were promulgated, together with regulations establishing a procedure to limit to 160 the number of vessels allowed to fish in the agreement area at any one time.

MARINE MAMMALS

The NMFS, through the Marine Mammal Program, carries out its responsibilities for whales, porpoises, seals, and sea lions under the Marine Mammal Protection Act of 1972. This Act, with certain exceptions, has placed a moratorium on the taking or importing of marine mammals and marine mammal products. Responsibilities include recommendations for waivers of the moratorium, issuance of permits for scientific research and public display, enforcement of the provisions of the Act, participation in negotiations with other nations for the protection and conservation of marine mammals, and Federal cooperation with States in administering the Act.

Research on porpoises has been directed principally to reducing as rapidly as possible the porpoise mortality and injury that is incidental to tuna purse seining. The secondary goals are to generate data on porpoise populations in the eastern tropical Pacific and to establish the status of these populations.

The Marine Mammal Protection Act requires that the United States commence negotiations within the Inter-American Tropical Tuna Commission (IATTC) to reduce the incidental take of marine mammals. The member nations of IATTC were requested on three occasions by the U.S. delegation to adopt regulations which would protect porpoise during tuna purse seining. We plan to make additional efforts of persuasion during 1975.

Significant progress in international whale conservation was made at the 26th Session of the International Whaling Commission, June 24-28, 1974. Catch limits for fin and sei whales were reduced in both the North Pacific and the Antarctic, and it was agreed that whale stocks would be managed by ocean areas rather than oceans as a whole. These lower catch limits and limits for smaller ocean areas will be in effect during the 1974/75 Antarctic season and the 1975 North Pacific season.

The NMFS has closely cooperated with coastal States to administer more effectively the Marine Mammal Act. At the end of 1974, NMFS had contracts for enforcement of the Act with five States. A policy has been developed under the provisions of the Act for the handling of beached and stranded marine mammals by State employees and officials. The Act sets forth a procedure under which the States can assume a more active role in the management of marine mammals within their boundaries by submitting State laws and management programs to NMFS for review and approval.

Significant accomplishments:

(1) Regulations were promulgated governing incidental taking of marine mammals in the course of commercial fishing operations. These regulations provided for the issuance of five general permits, based on the type of fishing gear. Four were issued and certificates of inclusion are being issued to individual fishermen for fishing operations to be conducted during 1975.

(2) A total of 46 applications for scientific research and public display permits were pending at the beginning of 1974 and 75 additional applications were received during the year. During the year 123 applications were considered: 50 were for scientific research and 73 for public display. Of the remaining applications, 4 were denied, 6 withdrawn, 5 inactivated, 1 resolved through interagency agreement, 4 referred to the appropriate States, and 39 pending as of December 31, 1974.

(3) The following reports were prepared and submitted, as required by the Act: (a) Report of the Secretary of Commerce on Administration of the Marine Mammal Protection Act, from June 22, 1973, to April 30, 1974; (b) Report of the Secretary of Commerce to the Congress on the Research and Development Program to Reduce the Incidental Take of Marine Mammals, from October 21, 1972 to October 20, 1974.

(4) Administrative policies were formulated and published in the Federal Register on the following subjects: (a) Issuance of permits for taking marine mammals to maintain a permanent inventory, (b) issuance of permits for taking marine mammals for public display in traveling road shows, and (c) procedures for hearings on proposed regulations.

ENDANGERED SPECIES CONSERVATION

The NMFS Endangered Species Program involves the administration of the Endangered Species Act of 1973 (the "Act") with respect to species under Department of Commerce jurisdiction (this includes certain fish, marine mammals, and sea turtles[1/]) and their dependent ecosystems. Of the listed endangered species, Commerce has jurisdiction over the shortnose sturgeon, blue whale, gray

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1/ The Departments of Commerce and Interior now share jurisdiction over sea turtles.

whale, right whales, humpback whale, bowhead whale, fin whale, sei whale, sperm whale, hawksbill sea turtles (both Atlantic and Pacific), leatherback sea turtle, and Atlantic ridley sea turtle. This Act, with certain exceptions, prohibits taking, importing, or exporting of endangered species and their parts or products. Responsibilities include issuance of permits for scientific purposes, enhancement of propagation, or survival, thereby allowing exceptions to otherwise prohibited acts; recommendations regarding limited exemptions in order to minimize undue economic hardship; enforcement of the provisions of the Act and regulations adopted thereunder; protection of critical habitat; encouraging foreign countries to provide for the protection and conservation of endangered and threatened species; and Federal cooperation with States in administering the Act. The NMFS plans to carry out its responsibilities under the Act commensurate with the availability of funds.

The determination to grant or deny a permit application involves a thorough review of the application by NMFS officials, which may include scientific scrutiny by State and NMFS regional officials, and inspection of the applicant's facilities. In certain cases applications are reviewed jointly by NMFS and the Department of Interior's Fish and Wildlife Service (FWS). Public comments are solicited and considered on each application.

The NMFS, in conjunction with FWS, has held regional workshops with representatives of both agencies and the States. Additionally, in an attempt to encourage the development of Federal/State Cooperative Agreements for the implementation of the Act through State management programs under the purview of NMFS and FWS, procedures and guidelines were developed in conjunction with FWS and sent to the Governors of all States, the Commonwealth of Puerto Rico, and U.S. Territories and Possessions. As a result, a number of States have made formal application for Cooperative Agreements. Under this procedure the States can assume a more active role in the management of endangered and threatened species that are resident species (existing in the wild within the State boundaries) by submitting State laws and management programs and plans to NMFS for review and approval.

Significant accomplishments:

(1) Much of the first year's effort was in developing policy and procedures. Strong emphasis was placed on cooperation with the Department of the Interior, the other primary Federal agency charged with the administration of the Act. As a result, NMFS and FWS entered into a Memoranda of Understanding regarding enforcement, jurisdiction, and listing procedures. The enforcement memorandum provides for a cross-utilization of enforcement authority and capability so that the capabilities and expertise of each agency are used to the best advantage and so that the Special Agents of each agency are given the widest authority possible, while eliminating the necessity for any duplication of effort. The jurisdiction and listing procedures memorandum clarifies the jurisdictional responsibilities of each agency on a species basis and establishes procedures for listing species. While both NMFS and FWS have similar program responsibilities under the Act, their program functions are keyed directly to species. Whereas the Act did not adequately set forth those species under the jurisdiction of each agency, this memorandum delineated species jurisdiction and allowed for ready administration of the Act.

(2) Regulations were promulgated governing: (a) permits; (b) civil procedures; and (c) seizures and forfeitures.

(3) The NMFS received an application for a permit to use endangered species for scientific purposes. The species were fin, sei, and sperm whales. The application, to participate in a joint U.S./U.S.S.R. whale observation and marking cruise, was granted after a public hearing. Receipt and processing of other permit applications that deal with species under Commerce Department jurisdiction is expected.

(4) Formal status reviews under the Act were announced in the Federal Register for four marine species to determine whether they should be added to the U.S. Endangered or Threatened Species Lists and how much protection these animals should receive. Under review are the Atlantic bluefin tuna, the green sea turtle, the loggerhead sea turtle, and the Pacific ridley sea turtle.

COLUMBIA RIVER FISHERIES PROGRAM

The mission of the Columbia Fisheries Program Office is to restore, maintain, and improve the fish runs of the Columbia River.

Salmon runs returning to the Columbia River in 1974 were below average. Spawning escapements in the lower river were generally good, but upriver races of salmon and steelhead in Idaho declined. Water developments, principally hydroelectric power dams, appear to be depressing upriver fish runs. A program of fish hatchery construction to replace these fish losses has been submitted to the Army Corps of Engineers for funding. Anadromous fish runs in the lower river were highlighted by a record count of 34,000 fall chinook and 5,000 summer steelhead through the fishways at Willamette Falls.

An engineering consulting firm, under the surveillance and review of NMFS, has completed 6

of 20 planning reports on hatchery pollution abatement. Structural design of abatement facilities at five hatcheries is underway by the States of Oregon and Washington and the Fish and Wildlife Service.

Studies to determine the educational and recreational assets of hatchery visits have shown over 325,000 people toured the Bonneville Hatchery in 1974. Tourism values will be included in future hatchery economic evaluations. Economists at Oregon State University are under NMFS contract to help determine these values.

Investigations have been made to determine the value of hatchery-raised fish taken commercially. Catches of the Canadian and Alaska ocean troll fisheries have shown a high incidence of marked spring chinook salmon that have been released from hatcheries.

PRIBILOF ISLANDS MANAGEMENT

The Fur Seal Act of 1966 (80 STAT. 1091) charges the Secretary of Commerce with the management of the Northern fur seal and administration of the Pribilof Islands. NMFS supervises a harvest of male fur seals surplus to the needs of the herds on St. Paul Island, Alaska, during a short period each summer in accordance with the terms of the Convention on Conservation of North Pacific Fur Seals between the United States, Japan, Canada, and the U.S.S.R. The 1974 harvest was 33,027 males, 3 to 5 years of age--the U.S. share was 23,119, and the balance of the harvest was equally divided between Japan and Canada.

The Northern fur seal is now harvested only on St. Paul Island. St. George Island has been designated as a marine mammal conservation and scientific research area through agreement with governments involved in the Convention. Data gathered by research personnel will be used in protection and preservation programs.

Implementation of the provisions of the Alaska Native Claims Settlement Act of 1971 (80 STAT. 688) has had definite impact upon the Pribilof Islands. NMFS negotiations with the Tanadgusix Corporation of St. Paul Island and the Tanaq Corporation of St. George Island resulted in Federal land retainment, including rookeries, of 6.5 percent of the total land mass on St. Paul Island. Land retainment on St. George including rookeries amounts to 2.5 percent of the total available land. The lands retained are considered to be the minimum amount necessary for the operation of the Government facilities and continued responsibilities of the international treaty.

The Fur Seal Act of 1966 stipulated that residents of St. Paul could purchase their houses under certain conditions of viability. The Alaska Native Claims Settlement Act (ANCSA) allows for acquisition of houses on St. Paul and St. George at no cost to the residents. The Aleuts have elected to obtain the houses by means of ANCSA.

The Government is retaining on both St. Paul and St. George only those buildings essential to the operation of the fur seal program. The balance of the buildings, recreation hall, tavern, store, canteen, hotel, old school on St. Paul, recreation hall on St. George, and houses surplus to the needs of the Government are being released to the corporation of the two islands. The respective corporations will issue title to the individuals occupying the houses as primary places of residence.

The Secretary's responsibility to furnish education for the natives of the Pribilof Islands has resulted in completion in 1974 of a new school on St. Paul for grades 1 through 10.

New staff quarters capable of handling 20 staff members and research personnel are near completion on St. Paul Island and will allow the old staff quarters to be released to the Tanadgusix Corporation.

NMFS began preliminary negotiations with The Aleut Corporation relating to transfer of the M/V Pribilof and operations. It is our intent to place the freight operation on a commercial basis.

INTERNATIONAL FISHERIES

The Office of International Fisheries coordinates NMFS participation in international activities concerning living marine resources of interest to the United States. It is organized into three divisions: International Negotiations, International Fisheries Analysis, and Language Services.

INTERNATIONAL NEGOTIATIONS

This Division prepares position and background papers for international negotiations or fisheries issues, and provides staff support for the implementation of international fisheries policy.

In 1974, the United States was a member of eight international fisheries commissions, responsible under treaty agreements to conserve and manage living marine resources of interest to the United States. It was also a party to 12

bilateral fishery agreements adopted to deal with more specialized management problems. In most cases, NMFS has primary responsibilities for making the scientific and technical assessments and investigations to determine the international measures needed to protect living marine resources. In addition, various NMFS officials have been appointed to serve as U.S. spokesmen in bilateral negotiations or as commissioners on several of the international fisheries commissions.

Significant accomplishments in the international area in 1974:

(1) At the 1974 Annual Meeting of the International North Pacific Fisheries Commission U.S. (INPFC), Japan agreed to a proposal to broaden discussion within INPFC to include consideration of stock conditions of Bering Sea groundfish and total fishing effort.

(2) Halibut conservation arrangements under the INPFC were also worked out as a result of United States and Canadian proposals at a meeting in Tokyo during the United States-Japan bilateral fishery negotiations. Japan agreed to ban trawling in specified areas and periods during 1975 in the eastern Bering Sea when halibut are taken in substantial quantities as an incidental catch. This helps protect juvenile halibut from capture by trawlers and reduces the risk of further declines in halibut abundance.

(3) As a result of the renegotiation of United States-Japan bilateral agreements on Pacific fisheries, Japan agreed to apply new restrictions during 1975 and 1976 in its North Pacific fisheries. The agreements resulted in substantial new protection for king and tanner crabs, particularly in the southeastern Bering Sea, and for groundfish stocks such as pollock, rockfish, black cod, halibut, and other resources that have been reduced through overfishing during the past 10 years.

(4) The International Commission for the Northwest Atlantic Fisheries (ICNAF) agreed to implement the second year of a three-year overall national catch quota off the U.S. North Atlantic coast designed to halt the decline in the biomass and to eventually allow stocks to recover to levels producing the maximum sustainable yield. A key feature is that the overall quota is a second-tier quota imposed over and above individual quotas on specified species or stocks. The second-tier quota for each country is set below the sum of the individual species quotas to correct assessment errors and to stimulate more selective fishing that will minimize bycatch problems. The Commission agreed on national allocations of an overall quota in 1975 of 850,000 metric tons. While the overall quota was reduced from the 1974 level of 923,000 metric tons, the U.S. share in the quota was increased from 195,000 tons in 1974 to 211,600 tons in 1975.

(5) The Council of the International Commission for the Conservation of Atlantic Tunas (ICCAT) adopted two regulatory measures for Atlantic bluefin tuna (Thunnus thynnus thynnus)--a 6.4-kilogram minimum size regulation and a limit on the fishing of bluefin tuna to recent levels for a period of one year. The regulatory proposals for bluefin tuna were made by the United States, based on the recommendations of the Standing Committee on Research and Statistics. The action of the Council was later approved by the full Commission.

(6) Agreement was reached in the Inter-American Tropical Tuna Commission (IATTC) concerning the yellowfin tuna regulatory program in the eastern tropical Pacific for the 1975 fishing year. The amount of the IATTC international catch quota for yellowfin will remain the same as that for 1974-175,000 tons with allowances for two additional 10,000-ton increments should data from the fishery warrant such increases.

(7) The U.S.-U.S.S.R. Fisheries Claims Board established by agreement with the Soviet Union in 1973 began to function in early 1974. The Board provides an informal means of facilitating the settlement of claims advanced by a national of one country against a national of the other country as a result of fishing gear conflicts. During 1974, a total of 25 claims alleging Soviet responsibility for gear loss or damage were considered by the Board. Settlements were recommended in 5 cases in the amount of $36,488. In one, the Board made a determination that the record did not support involvement by Soviet vessels. A total of 19 claims remain under active consideration.

INTERNATIONAL FISHERIES ANALYSIS

This Division collects and evaluates information from many sources on foreign activities affecting living marine resources. Periodic reports are issued concerning significant developments in other countries that may affect conservation and management programs or trade and investment opportunities. In cooperation with the State Department, a fishery attache program is administered, with attaches stationed in Tokyo, Mexico City, Copenhagen, and Casablanca.

LANGUAGE SERVICES

This Division acts as a national clearinghouse for translated literature in the fields of fisheries, oceanography, and atmospheric sciences. Translations are provided to industry, government, and academic circles. Most of the translations are produced in India, Pakistan, United Arab Republic, Tunisia, Israel, Poland,

and Yugoslavia and are funded with PL 83-480 Special Foreign Currencies. About 27,000 translations were distributed during FY 1974. In April 1974, the NMFS and NOAA translation activities were consolidated under one program which is administered by the Language Services Division.

PUBLICATIONS

The publication series issued directly under the auspices of NMFS in calendar year 1974 were:

Current Fisheries Statistics

Issued monthly, quarterly, or annually by States, regions, or larger areas--249 numbers (1,490 pages) issued.

Data Report

Available as microfiches or as hard copies from the U.S. Department of Commerce, National Technical Information Service--16 Data Reports (3,130 pages, 55 microfiches) issued. Prices vary according to length.

Fishery Bulletin

Issued quarterly (originated in 1881). Sold by the Superintendent of Documents. Four numbers of Volume 72 (1,187 pages) issued; contained 68 papers and an index.

Fishery Facts

Established in 1971; 4 numbers (120 pages) issued.

Fishery Market Development Series

None issued in 1974.

Marine Fisheries Abstracts

Issued monthly (until March 1973, titled Commercial Fisheries Abstracts). Has been issued since 1948. In 1974, 12 numbers (444 pages) issued. Publications ceased with the December issue.

Marine Fisheries Review

Issued monthly--12 numbers (635 pages). Sold by Superintendent of Documents.

Market News

The several Market News offices issue current statistical information almost daily--940 daily reports (2,638 pages) issued.

Current Economic Analysis

Consists of three subseries reports in which prices, production, imports, exports, and inventories of fishery products are analyzed: Issued in 1974: Food Fish Market Review and Outlook (3 numbers, 147 pages), Industrial Fish Market Review and Outlook (3 numbers, 87 pages), and Shellfish Market Review and Outlook (3 numbers, 146 pages). Until July 1973, these subseries were titled Situation and Outlook.

Miscellaneous Publications

Report of the National Marine Fisheries Service for Calendar Year 1973 (96 pages) issued in 1974.

NOAA Technical Memorandum NMFS

A total of 4 (203 pages) issued; in addition, Vol. 8 (7 pages plus 184 charts) of the EASTROPAC Atlas (Circular 330) issued. Sold by the Superintendent of Documents.

Statistical Digest

Annual compilations of statistics with detailed tabulations relating to fishery production, manufacture, and commerce. In 1974, 1 (424 pages) issued.

Listing of Publications by Author

NMFS staff members published in publications with the NMFS imprimatur, and in journals and technical publications. Following is a listing by author of works published in calendar year 1974 (not included are articles in Marine Fisheries Abstracts, Current Fishery Statistics, Market Review and Outlook Reports, and Marine Fisheries Review unless published under a by-line):

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